VLODAVETS, V.I., red.; GORSHKOV, G.S., red.; LEBEDEV, A.F., red.; MALKHASYAN, E.G., red.; MKRTCHYAN, S.S., akad., red.; NABOKO, S.I., red.; USTIYEV, Ye.K., red.; SHIRINYAN, K.G., red.; MARCHINA, T.Yu., red. izd-va; NOVICHKOVA, N.D., tekhn. red.; ZUDINA, V.I., tekhn. red.

[Problems of volcanism] Voprosy vulkanizma; trudy. Moskva, Izd-vo Akad. nauk SSSR, 1962. 450 p. (MIRA 15:5)

1. Vsesoyuznoye vulkanologicheskoye soveshchaniye. 1st, Erevan, 1959. 2. Laboratoriya vulkanologii Akademii nauk SSSR (for Vlodavets, Gorshkov, Naboko). 3. Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii Akademii nauk SSSR (for Lebedev, Ustiyev). 4. Institut geologicheskikh nauk Akademii nauk Armyanskoy SSR (for Malkhasyan, Shirinyan). 5. Akademiya nauk Armyanskoy SSR (for Mkrtchyan).
(Volcanoes)

SHIRINYAN, K. G., KARAPETYAN, S. G.,

"Particularities of structure and petrology of volcanos in the form of domes in Armenia"

Report to be submitted for the 13th General Assembly, Intl. Union of Geodesy and Geophysics (IUGG), Berkeley Calif., 19-31 Aug 63

SHIRINYAN, K.G.; ADAMYAN, A.A.; KARAPETYAN, K.I.; KARAPETYAN, S.G.

Some characteristics of the distribution of trace elements in the recent volcanic products of Armenia. Zap.Arm.otd.Vses.min.ob-va no.2:27-56 '63. (MIRA 16:10)

SHIRINYAN, K.G.

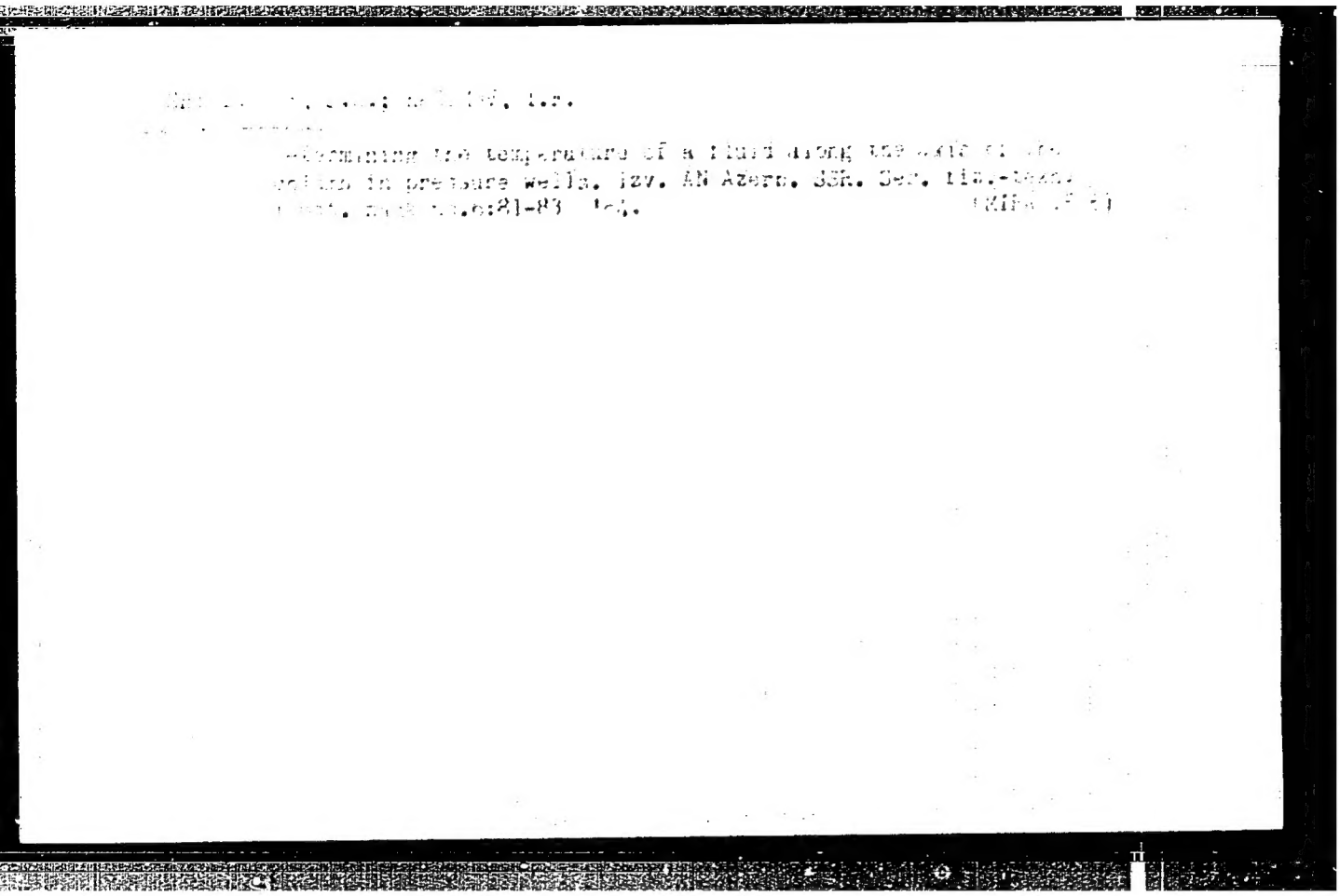
Hyaloclastic rocks and the conditions of their formation in Armenia. Trudy Lab. paleovulk. Kazakh. gos. un. no.2:200-210 '63. (MIRA 17:11)

1. Institut geologicheskikh nauk AN Armyanskoy SSR.

MKRTCHYAN, K.G.

Second All-Union Volcanological Conference (Petropavlovsk-Kamchatskiy in September 1964). Izv. AN Arm. SSR. Nauki o zem. 18 no.1:75-80 '65. (MIRA 18:5)

1. Institut geologicheskikh nauk AN Armyanskoy SSR.



SHIRIYAZDANOV, Shaykhrazy Khasanovich; MUSIN, Kh.M., otv. red.; KOVAL'CHUK, V.V., red.izd-va; ANOKHINA, M.G., tekhn. red.

[Working class of Kirghizistan in the struggle for industrial development during the postwar years, 1946-1953] Rabochii klass Kirgizii v bor'be za razvitie promyshlennosti v poslevoennye gody, 1946-1953. Frunze, Izd-vo Akad.nauk Kirgizskoi SSR, 1962. 208 p. (MIRA 16:3)

(Kirghizistan--Labor and laboring classes)
(Kirghizistan--Industries)

Name: SHIRKEVICH, K. A.

Dissertation: The general education school of Tatar ASSR in the period of completing the building of socialism and gradual conversion to communism (1935-1941)

Degree: Cand Ped Sci

~~Affiliation~~ Kandidat: Kazan' State Order of Labor Red Banner U imeni V. I. Ul'yanov-Lenin

Defense Date, Place: 1956, Kazan' Publication

Source: Knizhnaya Letopis', No 45, 1956

SHIRKOVICH, M. G., KOSHKIN, N. I., MOSHKOV, V. F., SOKOLOV, V. D. and YAKOVLEV, V. F.

"Impulse Method of Fixed Distances, Its Physical Basis and Practical Application". Abstracted for inclusion in the Second International Congress on Acoustics, Cambridge, Mass., 17-24, Jun 1956

Moscow State University

Shirkevich, M G

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35575

Author: Koshkin, N. I., Nozdrev, V. F., Sobolev, V. D., Shirkevich, M. G., Yakovlev, V. F.

Institution: None

Title: The Fixed-Distance Pulse Procedure, Its Physical Foundations, and Practical Application

Original Periodical: Akust. zh., 1956, 2, No 2, 161-166

Abstract: A substantiation is given for a newly developed procedure for pulse measurements of absorption of ultrasonic waves. Unlike the present widely-used procedure, in which it is necessary to move the radiator and the reflector relative to each other, the radiator and reflector remain stationary in this method. This circumstance not only simplifies to a considerable extent the construction of the measuring chamber and accelerates the measurement process, but leads also to a more successful utilization of the pulse method in the

Card 1/2

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35575

Abstract: measurement of absorption at high temperatures and at high pressures, and also at various types of phase transitions.

Results are given on the measurement of the coefficient of absorption of ultrasonic waves, performed with the fixed-distance method; the experimental data are compared with the results obtained by other methods; it is indicated that it is possible to employ the fixed-distance pulse method for control and in industry.

Card 2/2

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3751. B-8

states. The ratio C_p / C_v of saturated and overheated vapors of all the above mentioned alcohols, as well as C_p and C_v of overheated CH_3OH vapors and C_p of saturated C_2H_5OH vapors were computed from the calculated IC values and data on adiabatic compressibility borrowed from the literature.

Card : 2/2

AKHMETZYANOV, K. T. and SHIRKEVICH, M. G.

"Propagation of Ultrasound in Ethyl Alcohol Vapors."

report presented at the 6th Sci. Conference on the Application of Ultrasound in the investigation of Matter, 3-7 Feb 1958, organized by Min. of Education RSFSR and Moscow Oblast Pedagogic Inst. im N. K. Krupskaya.

SHIRKEVICH, M.G.

PHASE I BOOK EXPLOITATION SOV/3352

Vsesoyuznaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov.

Primeneniye ul'trakustiki k issledovaniyu veshchestva; trudy konferentsii, vyp. 8 (Application of Ultrasonics in the Study of Matter; Transactions of a Conference, Nr. 8) Moscow, Izd. MOPI, 1959. 170 p. 1,000 copies printed.

Tech. Ed.: S. F. Zhitov.

PURPOSE: The book is intended for physicists, particularly those specializing in the field of ultrasonics.

COVERAGE: This is a collection of 12 articles dealing with problems of acoustics, ultrasonics, and molecular physics. References are given at the end of each article.

Fredvoditelev, A. S. Dispersion of Acoustic Waves in Rarefied Gases. Article I. 19

Zipir, A.-D., and V. F. Yakovlev. Pulse Method for Multiple Transformation of an Ultrasonic Signal in the Investigation of Liquid Media 63

Ilgunas, V., and E. Yaronis. On the Theory of Interferometers With Variable and Constant Length 67

Trelin, Yu. S. Some Results of Measurement of Ultrasonic Velocity in Gases by the Pulse Method 75

Volarovich, M. P., and D. B. Maleshov. Investigation of Ultrasonic Velocity in Nitrogen Under Pressures up to 1050 kg/sq cm 83

Akhmetzyanov, K. G., and M. G. Shirkevich. Ultrasonic Velocity in Compressed Vapors of Ethyl Alcohol and Determination of Heat Capacities C_p and C_v 93

Perepechko, I. I. Ultrasonic Propagation in Rarefied Gases 103

Kucherk, F. On Some Conditions for Applicability of Raoult's Law for Solutions 115

Shilyayev, A. S., and B. B. Kudryavtsev. Ultrasonic Velocity and Surface Tension in Ternary Liquid Systems 121

Bessonov, M. B. Measuring Ultrasonic Velocity and Absorption in Solutions at High Temperatures 137

KOSHKIN, Nikolay Ivanovich; SHIRKEVICH, Mikhail Grigor'yevich; SAKHAROV, D.I., red.; VARPAKHOVSKIY, F.L., red.; MURASHOVA, N.Ya., tekhn.red.

[Handbook on elementary physics] Spravochnik po elementarnoi fizike. Pod red. D.I.Sakharova. Moskva, Gos.izd-vo fiziko-matem. lit-ry, 1960. 208 p. (MIRA 13:8)
(Physics)

SHIRKEVICH, M.G.

PHASE I BOOK EXPLOITATION SOV/5207

Vserossiyskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov

Primeneniye ul'traakustiki k issledovaniyu veshchestva (Utilization of Ultrasonics for the Investigation of Matter) Moscow, Izd. MOPI, 1960. 267 p. 1,000 copies printed. (Series: Its Trudy, vyp. 11)

Ed. (Title page): V.F. Nozdrev, Professor and B.B. Kudryavtsev, Professor.

PURPOSE: This collection of articles is intended for physicists specializing in the physics of ultrasound.

COVERAGE: The collection of articles constitutes the transactions of the VII Conference on the Applications of Ultrasonics to the Study of Materials, which was held at the Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya. Individual articles of the collection discuss various problems in the wave mechanics of ultrasound, the absorption and the propagation mechanics of ultrasonic waves in various media, the operating principle and design of generators and receivers of ultrasonic waves, the speed of sound and methods for its determination. Other articles deal with the applications of ultrasonics to investigations of the properties of materials. No personalities are mentioned. References accompany

Utilization of Ultrasonics (Cont.) SOV/5207

Khlebrodova, E.T., and B.B. Kudryavtsev [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Propagation of Sound in Disperse Media 163

Kal'yanov, B.L. [Tambov Pedagogical Institute]. Determination of the Speed of Ultrasound From the Periodic Variations of the Phase Relations of Two Acoustic Pulses 173

Kanatova, R.F., and B.B. Kudryavtsev [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Speed of Sound in Aqueous Solutions of $Mn(NO_3)_2$ 181

Shilyayev, A.S., and B.B. Kudryavtsev [Izhevskiy meditsinskiy institut— Izhevsk Medical Institute, ... Oblast Pedagogical Institute imeni N.K. Krupskaya]. Investigation ... Propagation of Ultrasonic Waves in Three-Liquid Mixtures Whose ... Have Different Interaction Patterns 191

Koneva, N.P., and B.B. Kudryavtsev [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Application of Acoustic Measurements in the Study of Density Fluctuations in Liquids 201

Glipskiy, A.A. [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Diffraction of Light on Damped Ultrasonic Waves 205

Perepechko, I.I., and V.F. Yakovlev [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. New Method Using Interferometer to Measure Absorption of Ultrasound 213

Shirkevich, M.G. [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Investigation of the Speed of Propagation and Absorption of Ultrasound in Liquid Phase Methyl Alcohol Near the Critical Region 219

Malyavin, I.G. [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Investigation of Temperature Dependence of Sliding and Volumetric Viscosity of Certain Organic Liquids in the Critical Region 225

Rozin, Yu.P., and V.S. Tikhonova [Odesskiy politekhnicheskiy institut— Odessa Polytechnic]. Device for Measuring the Intensity of an Ultrasonic Field in Conducting Liquids 233

Perepechko, I.I., and V.F. Yakovlev [Moscow Oblast Pedagogical Institute imeni N.K. Krupskaya]. Relaxation Processes in Van Der Waals Gases 239

Merkulov, L.G. [LETI im. V.I. Ul'yanova (Lenina)— Leningrad Electrotechnical Institute imeni V.I. Ul'yanov (Lenin)]. Absorption of Ultrasonic and Hypersonic Waves in Certain Crystals 247

Topolev, V.P. Lecture Room Demonstrations With Ferrite Ultrasound Radiators 253

Bulletin 265

AVAILABLE: Library of Congress (QC244.V82)

17

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549520012-2"

S/058/61/000/009/049/050
A001/A101

AUTHORS: Nozdrev, V.F., Kal'yanov, B.I., Shirkevich, M.G.

TITLE: Ultra-acoustic studies in organic liquids at a constant density near critical state

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 294, abstract 9Zh437 (V sb. "Kritich. yavleniya i fluktuatsii v rastvorakh", Moscow, AN SSSR, 1960, 93 - 101)

TEXT: The authors measured the velocity c of ultrasound and absorption α in methyl alcohol at $\sim$6 Mc and in ethyl acetate at 10-33 Mc at a constant density. It follows from the measurement results that at ρ = const, T = const, function c = c(p) (p is pressure) has a minimum and function $\alpha/\nu^2 = \varphi(p)$ has a maximum at the pressure of saturated vapor. At ρ = const near the saturation line, there is a pretransition region in which $\Delta c/\Delta T$ and $\Delta \alpha/\Delta T$ change their signs. On the basis of experimental results, heat capacity of methyl alcohol is determined. In the subcritical region at the pressure of saturated vapor, c_p,

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A001/A101

Ultra-acoustic studies ...

c_v, and c_p/c_v show discontinuities. In ethyl acetate relaxation frequency ($\sim$14 Mc) does not change in the temperature range from 20 to 160°C if ρ = const. Dispersion is calculated to be $c_\infty - c_o$ = 0.1 - 0.2 m/sec.

L. Zarembo

[Abstracter's note: Complete translation]

Card 2/2

SHIRKEVICH, M. G., Cand Phys-Math Sci --"Study of the speed of propagation and absorption of supersonic waves in the liquid state of methyl alcohol at high temperatures and pressures." Mos, 1961. (Min of Ed RSFSR. Mos Oblast Ped Inst im N. K. Krupskaya) (KL, 8-61, 229)

KOSHKIN, Nikolay Ivanovich; SHIRKEVICH, Mikhail Grigor'yevich;
RYDNIK, V.I., red.

[Handbook on elementary physics] Spravochnik po elementarnoi fizike. Moskva, Nauka, 1965. 246 p. (MIRA 18:8)

SHIRKEVICH, N.

On the compilation of republic and local budgets. (In: Moscow. Nauchno-issledovatel'skii finansovyi institut. Nauchnye zapiski. Moskva, 1953, p.137-168.) (MLRA 7:2)

1. Moscow. Nauchno-issledovatel'skiy finansovyy institut. (Budget)

SHIRKEVICH, N.

SHIRKEVICH, N.; OBOLENSKIY, N., redaktor; SHITIKOVA, Ye., redaktor; LEBEDEV, A., tekhnicheskiy redaktor

[Appropriations from national revenue for local budgets] Otchisleniia v mestnye biudzhety ot gosudarstvennykh dokhodov. Moskva, Gosfinizdat, 1955. 73 p. (MLRA 8:4)
(Budget) (Local finance)

3-6-26/29

AUTHOR: Vasil'yev, P. G., Dotsent, and Shirkevich, N. A., Senior Scientific Collaborator

TITLE: About a Manual on USSR Finances (Ob uchebnom posobii po finansam SSSR)

PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 6, pp 87-92 (USSR)

ABSTRACT: A review of a book written by Professor A. M. Aleksandrov – "The Finances of the USSR" – of which the second revised edition has now been published. The USSR Ministry of Higher Education has approved the use of the book as a manual for the higher financial-economic educational institutions and faculties. The author first deals in general terms with financial problems in a socialistic country. He then emphasizes the necessity of a textbook on these finances and their theoretic principles. Attempts to prepare such a textbook have been repeatedly made by M. I. Bogolepov, V. P. D'yachenko, A. K. Suchkov and others, but of all the literature published during the last ten years on USSR finances, A. M. Aleksandrov's book is best suited. In the author's opinion it would have been expedient to start the study with

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an analysis of the historical development of finances. This could have helped to formulate the basic features of the present USSR finances.

Professor Aleksandrov has begun by defining finances, their substance, functions and role. The author objects that the book, when determining the conception of finances, gives several varying definitions. The inaccuracy and sometimes the lack of definitions somewhat lower the scientific level of the manual. The author further opposes Aleksandrov's point of view that in a course on Soviet finances questions on prices should not be included. He also considers that the separation of the question of financial-credit system and the organization of its management into two parts is not justified. The financial credit system is dealt with in chapter II whilst the organization of its management is discussed in chapter XXV. These questions being mutually connected should be examined jointly at the end of the course. It is further considered that the theme on the functions of finances has not been worked out sufficiently. This also applies to the question of the controlling functions of Soviet finances (para. 4 chapter I). The

Book a Manual on USSR Finances 3-6-26/29

In other parts of the book the formulations of this question are correct. There are 3 Russian references.

ATION: All-Union Correspondence Course Financial Institute (Vsesoyuznyy zaochnyy finansovyy institut), Scientific Research Financial Institute (Nauchno-issledovatel'skiy finansovyy institut)

ILABLE: Library of Congress

1/4

VASIL'YEV, P.; SHIRKEVICH, N.

Consolidating district and village budgets. Fin.SSSR 20 no.12:39-47 D '59. (MIRA 12:12)
(Budget)

SHIRKEVICH, Nina Aleksandrovna; LAVROV, V.V., prof., otv. red.
SUBBOTINA, K., red.; KONDRAT'YEVA, A., red.

[Local budgets of the U.S.S.R.] Mestnye biudzhety SSSR.
Moskva, Finansy, 1965. 167 p. (MIRA 18:3)

BALANDIN, A.A., inzh.; SHIRKEVICH, N.S.

Proposals of the efficiency promoters of the "Vasilevich II" enterprise of the Economic Council of White Russia. Torf.prom. 39 no.3:28-30 '62. (MIRA 15:4)

1. Torfopredpriyatiye "Vasilevichi II".
(White Russia--Peat machinery)

BONDIN, M.A.; SINYAKOV, O.G., inzh.; SHIRKEVICH, N.S., inzh.; POPOVICH, M.V.; TATARNIKOV, M.N.; BALANDIN, A.A., inzh.; KHOLODKOV, N.Ye.; KOLEVATYKH, S.F., inzh.

Exchange of practices by the enterprises of economic councils. Torf. prom. 39 no.6:28-35 '62. (MIRA 16:7)

1. Kalininskiy sovet narodnogo khozyaystva (for Bondin). 2. 2. Torfopredpriyatiye Vasilevichi II (for Sinyakov, Shirkevich, Balandin, Kholodkov). 3. Nachal'nik konstruktorskogo byuro Tesovskogo transportnogo upravleniya (for Popovich). 4. Starshiy inzh. konstruktorskogo byuro Tesovskogo transportnogo upravleniya (for Tatarnikov). 5. Yaroslavskoye torfopredpriyatiye Yaroslavskogo narodnogo khozyaystva (for Kolevatykh).

(Peat machinery—Technological innovations)

RYSIN, V.I., inzh.; KHOLODKOV, N.Ye., inzh.; SHIRKEVICH, N.S., inzh.; SINYAKOV, O.G.

Exchange of experiences by the enterprises of economic councils. Torf.prom. 40 no.1:30-33 '63. (MIRA 16:5)

1. Torfyanoye predpriyatiye "Radovitskiy mokh" (for Rysin).
2. Torfyanoye predpriyatiye Vasilevichi II (for Kholodkov, Shirkevich).

(Peat machinery)

KUTUZOV, L.G.; RYSIN, V.I., inzh.; SHIRKEVICH, N.S., inzh.; KUZNETSOV, N.D., inzh.; FILIMONTSEV, I.S., inzh.; PAPINOVA, O.I., inzh.; KHOLODKOV, N.Ye., inzh.; ASTAFUROV, O.A.; SASS, K.Z.; SASIM, A.S.; SAFAROVA, Ye.S. [deceased]

Exchange of practices by the enterprises of economic councils. Torf. prom. 40 no.7:34-38 '63. (MIRA 17:1)

1. Gusevskoye torfopredpriyatiye Verkhne-Volzhskogo soveta narodnogo khozyaystva (for Kutuzov). 2. Torfopredpriyatiye Vasilevichi II Belorusskogo soveta narodnogo khozyaystva (for Shirkevich, Filimontsev, Papinova, Kholodkov). 3. [illegible]yavskiy lesnoy khimicheskiy kombinat Gor'kovskoy obl. (for Kuznetsov). 4. Fornosovskiy torfobriketnyy zavod Leningradskogo gosudarstvennogo tresta torfyanoy promyshlennosti (for Sass).

NOZDREV, V.F.; SHIMKEVICH, M.O.

Calculating the heat capacity of the liquid phase of methyl alcohol on the basis of acoustic data. Prim. ul'traakust. k issl. veshch. no.13:27-34 '61. (MIRA 16:6)

(Methanol—Thermal properties)
(Ultrasonic waves—Speed)

SOV/81-59-19-68582

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, p 300 (USSR)

AUTHORS: Kitaygorodskiy, I.I., Shirkevich, T.L.

TITLE: The Production of Alkali-Free Foam Glass

PERIODICAL: Steklo. Byul. Gos. n.-i. in-ta stekla, 1959, Nr 1 (101), pp 15 - 21

ABSTRACT: An investigation of the possibilities of obtaining foam glass on the base of three alkali-free glasses: M-519, M-519a, Nr 13v (the compositions are given in a table) has been carried out. Gas-forming agents: Na_2CO_3, $CaCO_3$-chalk, $CaCO_3$-marble, SiC, C-carbon black, Na_2SO_4, MnO_2. It has been confirmed that the behavior of the gas-forming agent, the character of foaming and the temperature interval of foaming strongly depend on the chemical composition and the properties of the initial glass. The M-519 and M-519a glasses with the gas-forming agent pyrolusite produce a foam glass with a partially connected structure. On the base of M-519a glass with carbon black as gas-forming agents a foam glass with closed structure can be obtained. MnO_2 can be used as gas-forming agent for producing foam glass not only at low but also at

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high temperatures (up to 1,200°C). Foam glass with closed structure can be obtained from the glass Nr 13v with MnO_2 and carbon black only in a very narrow temperature interval, being above the region of maximum crystallization of this glass. The 11-519 glass can be recommended for obtaining alkali-free foam glass.

I. Mikhaylova

15(2) SOV/72-59-10-2/14

AUTHORS: Kitaygorodskiy, I. I., Professor, Shirkevich, T. L.

TITLE: Some Properties of Alkali-free Foam Glass

PERIODICAL: Steklo i keramika, 1959, Nr 10, pp 5 - 6 (USSR)

ABSTRACT: The authors of this paper set themselves the task to obtain commercial foam glass from glass free of alkali and boron. In the findings of a previous investigation made by the authors (Footnote 1), the glass M-519 was recommended as initial material for the manufacture of alkali-free foam glass. Furthermore, some properties of alkali-free glass were investigated: compressive breaking strength, the coefficient of thermal expansion, temperature stability, the coefficients of temperature and thermal conductivity, and the average specific heat. A special paper will be devoted to the three last-mentioned properties, as may be seen from footnote 2. The experimental results are presented in the figure which shows the dependence of the compressive breaking strength on the weight by volume of the foam glass (Curve 1). The compressive strength of foam glass of the F brand of the Gomel' Glassworks is shown in curve 2, and the strength of some highly porous samples in curve 3. The coefficient of thermal expansion of the foam glass was measured on a quartz dilatometer of the design of the

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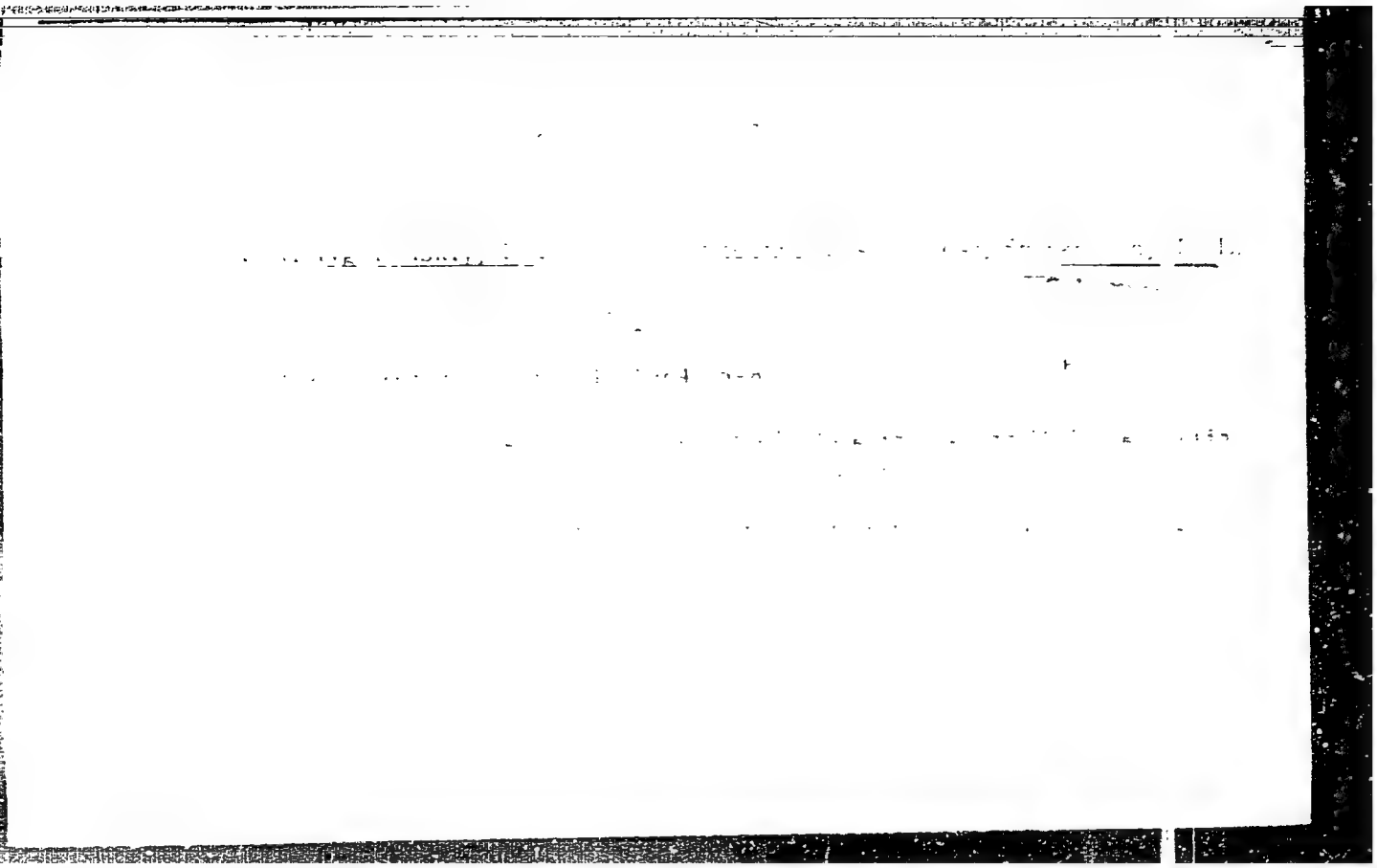
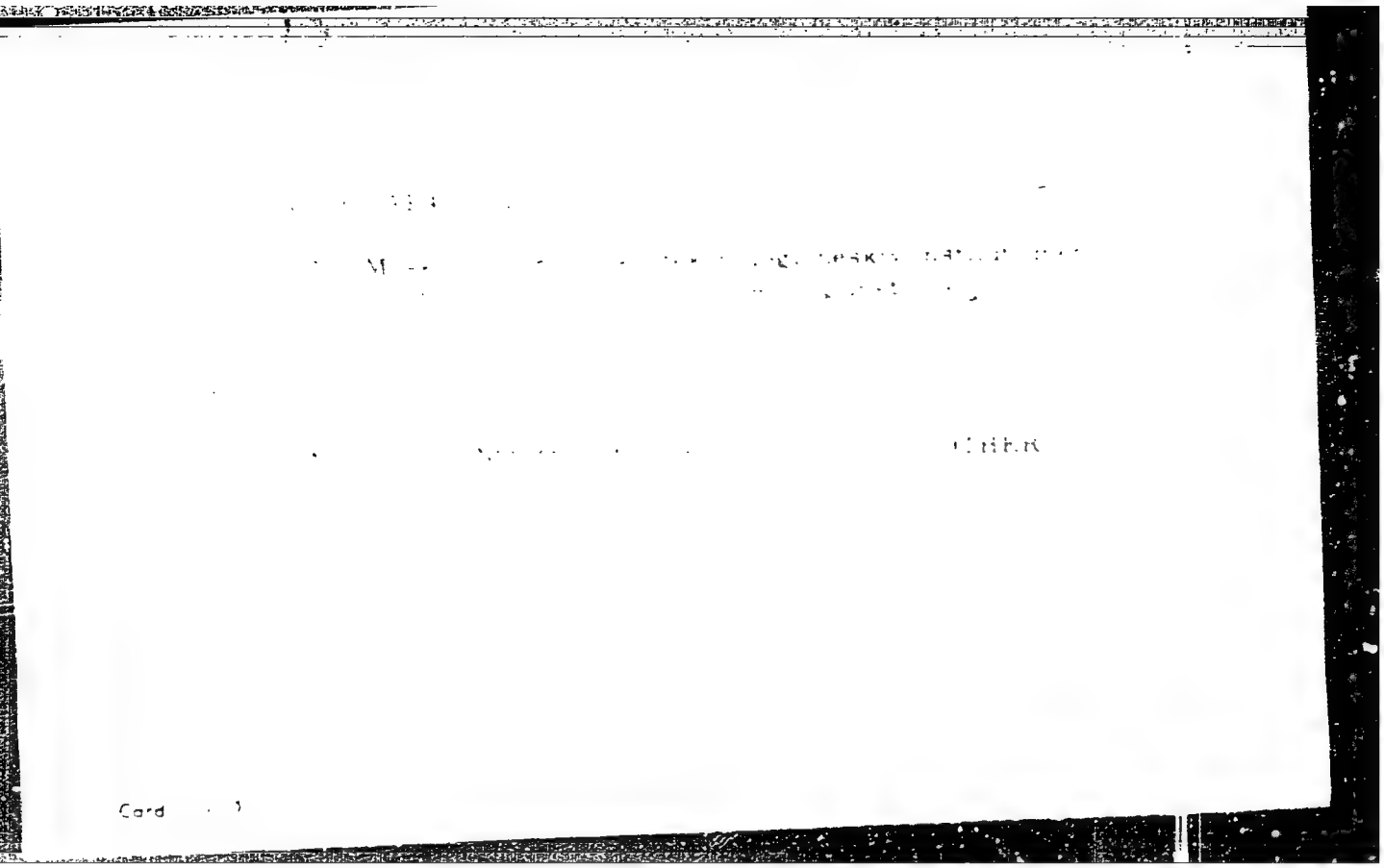
Instituta stekla (Glass Institute). Furthermore, the coefficients of thermal expansion of the glass M-519, as well as of the foam glass of the Gomel' Glassworks were determined and described for comparative purposes. Experiments are mentioned concerning the molding of foam glass at the laboratoriya stroitel'nogo stekla GIS (Laboratory for Building Glass GIS), which showed that boron-free foam glass made from the glass M-519 has a molding temperature over 780°, as against the temperature of 570-625° of the Gomel' foam glass. As a result of experiments, it was possible to obtain alkali- and boron-free foam glass from the glass M-519, which is recommended as heat-insulating material for temperatures of up to 500-600°. There is 1 figure.



[illegible] gave the best results. Subsequent to frothing glass samples, [illegible] were heat treated. It was found that [illegible] causes an increase in the frothing temperature [illegible]



ACCESSION NR: AP5017210 UR/0020/65/162/006/1339/1341

AUTHOR: Kitaygorodskiy, I. I.; Shirkevich, T. L.

TITLE: Effect of the nature of crystallization of glass on the structure of foam glass

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1339-1341, and insert facing p. 1340

TOPIC TAGS: foam glass, glass crystallization, glass structure

ABSTRACT: The authors studied the preparation of foam glass from alkali-free and low-alkali boron-free glasses differing both in composition and in crystallizing properties. An investigation of the foamability of the glasses showed that crystallization sometimes has a negative effect on the foaming a- glass (glasses Nos. 13v, 2, 3, 4, and 5), and even prevents [illegible] glass No. 8 [illegible] cases, foam glass with regular, fine [illegible] obtained (No. 11) from glass which crystallizes to a high degree [illegible] as from glass of low crystallizability such as M-519 and [illegible] glasses exhibits diverse behavior, x-ray diffraction an[illegible]

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ACCESSION NR: AP5017210

Electron microscopic analyses were carried out on glasses crystallized under various conditions and on samples of foam glass. It was found that the nature of the crystallization has a pronounced effect on the structure of the foam glass obtained. The formation of a uniform, finely crystalline microstructure does not prevent the formation of a foam glass having regular, fine closed pores. Relatively coarse, nonuniform crystals impair the foamability and sometimes prevent the formation of foam glass. "The electron micrographs were taken by N. M. Vaysfel'd." Orig. art. has: 4 figures.

ASSOCIATION: None

ENCL: 00 SUB CODE: MT

SUBMITTED: 26Nov64

OTHER: 001

NO REF SOV: 002

Card 2/2

DIAAP DM

ACCESSION NR: AP5001276 S/0089/64/017/006/0509/0511

AUTHOR: Shirkin, L. M.

TITLE: Application of the Monte-Carlo method to the computation of the passage of gamma-radiation through substance

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 509-511

TOPIC TAGS: Monte Carlo method, gamma radiation, radiation protection, shielding, water, mean free path

ABSTRACT: The paper shows how the work on the computation of the individual history of a γ-photon is reduced by the Monte-Carlo method. The latter permits the computation of 20 to 60 incidents per hour. It is possible to solve without electronic computer many problems on the passage of γ-photon. Three operations are selected which are the most time consuming: determination of (1) the mean free path of the γ-photon, (2) the Compton scattering angle, (3) the angle between the normal to the plate and direction of γ-photon after (n+1)-th scattering.

Card 1/2

L 24244-65

ACCESSION NR: AP5001276

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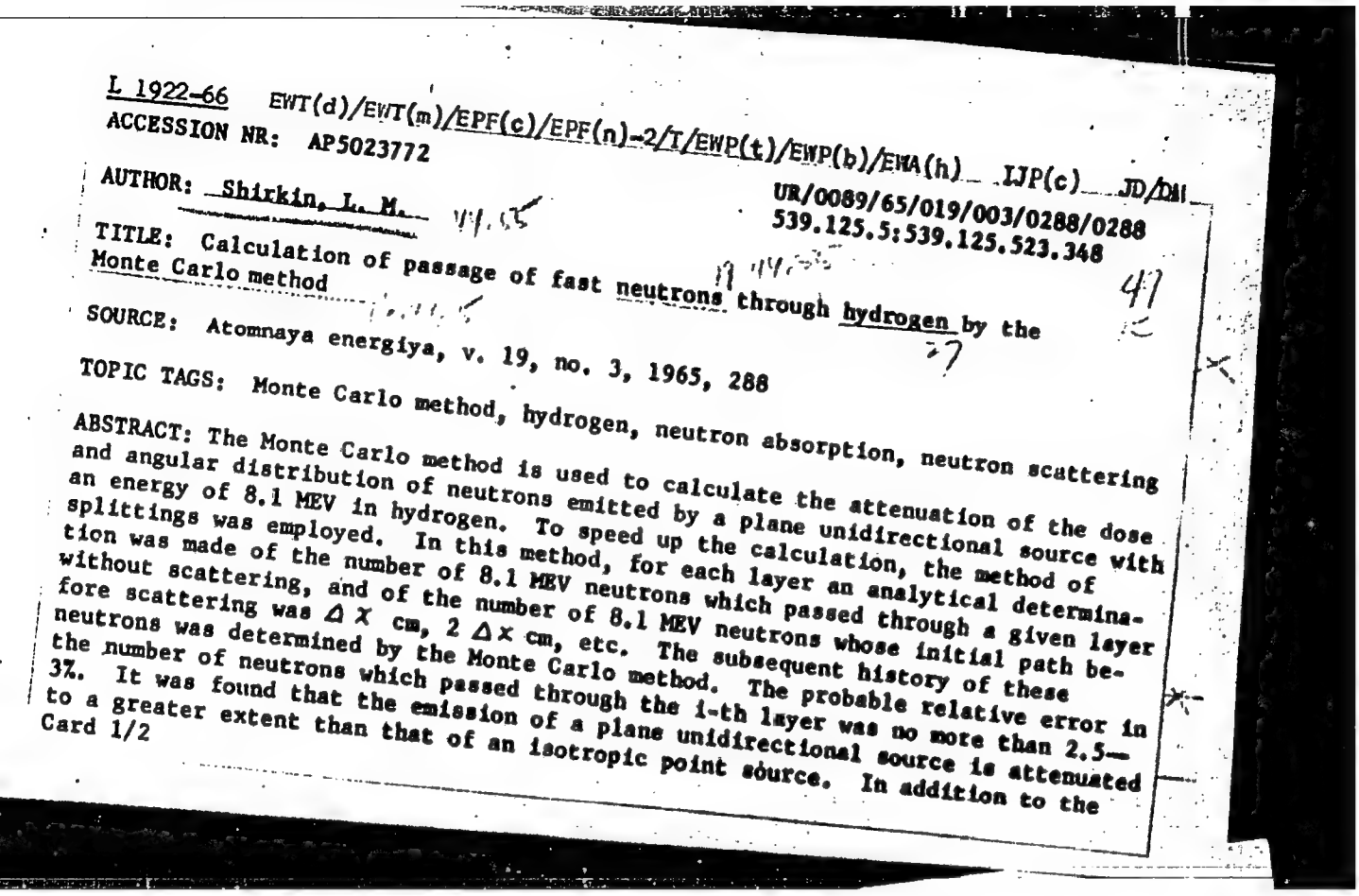
The method was used for the determination of the coefficient of the energy decrease by scattering in water. 10 energy groups were considered. The results [illegible] method compare favorably with the theoretical calculations.

SUB CODE: NP, MA

Card 2/2



L 1922-66 EWT(d)/EWT(m)/EPF(c)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/DM

ACCESSION NR: AP5023772 UR/0089/65/019/003/0288/0288
539.125.5:539.125.523.348

AUTHOR: Shirkin, L. M.

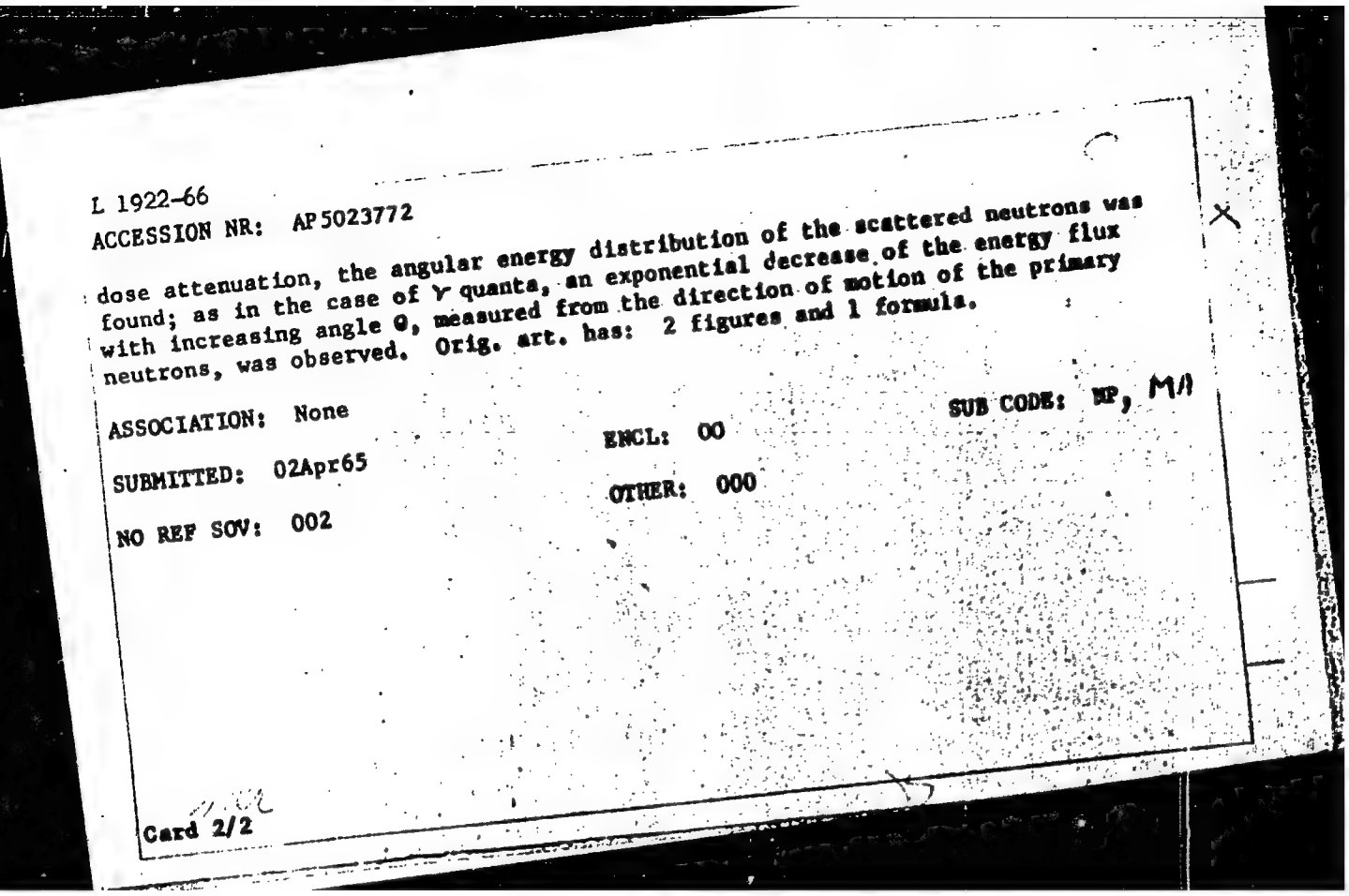
TITLE: Calculation of passage of fast neutrons through hydrogen by the Monte Carlo method

SOURCE: Atomnaya energiya, v. 19, no. 3, 1965, 288

TOPIC TAGS: Monte Carlo method, hydrogen, neutron absorption, neutron scattering

ABSTRACT: The Monte Carlo method is used to calculate the attenuation of the dose and angular distribution of neutrons emitted by a plane unidirectional source with an energy of 8.1 MEV in hydrogen. To speed up the calculation, the method of splittings was employed. In this method, for each layer an analytical determination was made of the number of 8.1 MEV neutrons which passed through a given layer without scattering, and of the number of 8.1 MEV neutrons whose initial path before scattering was Δx cm, $2\Delta x$ cm, etc. The subsequent history of these neutrons was determined by the Monte Carlo method. The probable relative error in the number of neutrons which passed through the i-th layer was no more than 2.5—3%. It was found that the emission of a plane unidirectional source is attenuated to a greater extent than that of an isotropic point source. In addition to the

Card 1/2



L 1922-66
ACCESSION NR: AP5023772

dose attenuation, the angular energy distribution of the scattered neutrons was found; as in the case of γ quanta, an exponential decrease of the energy flux with increasing angle θ, measured from the direction of motion of the primary neutrons, was observed. Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: None

SUBMITTED: 02Apr65 ENCL: 00 SUB CODE: NP, MA

NO REF SOV: 002 OTHER: 000

Card 2/2

L 28368-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP5026451 SOURCE CODE: UR/0089/65/019/004/0394/0395

45
B

AUTHOR: Shirkin, L. M.

ORG: None

19
27

TITLE: Angular distribution of gamma intensity scattered in lead and water

SOURCE: Atomnaya energiya, v. 19, no. 4, 1965, 394-395

TOPIC TAGS: gamma scattering, Monte Carlo method, lead, water, angular distribution

ABSTRACT: The Monte-Carlo method was used by the author for calculating the gamma angular scattering in lead and water. A flat monodirected source of 4 Mev was considered in the barrier geometry. The thickness of barrier was equal to 14 free-path lengths in lead and 16 lengths in water. The lead barrier was divided in 11 layers and the water barrier in 12. The analysis of gamma intensity distribution showed that the configuration of angular distribution depended very little upon the barrier thickness. Thus, an average distribution was applied to three neighboring barriers. The thickness of each successive barrier increased approximately by a 1.4 path length. The calculated average values of angular distribution were plotted and illustrated in a graph. Another

2

UDC: 539.122:539.121.72

Card 1/2

L 28368-66
ACC NR: AP5026451

curve showed the energy dependence of the angular distribution constant in lead. At the initial energy level of 4 Mev this constant was equal to 11.2 degrees for lead and to 13.1 degrees for water. An approximate formula for calculation of errors for each layer was also given. The results of this research corroborated the conclusions deduced from previous studies. Namely, it was proven that the angular distribution constants depend very little upon the barrier thicknesses (up to 15 path lengths) and differ little in degree for various materials and energy levels (greater than 2 Mev). Orig. art. has: 2 graphs.

SUB CODE:20,12 / SUBM DATE:09Dec64 / ORIG REF: 005 / OTH REF: 000

Card 2/2 CC

L 22380-66 EWT(m)/EPF(n)-2/EWA(h)
ACC NR: AP6007958 SOURCE CODE: UR/0089/66/020/002/0162/0164

AUTHOR: Shirkin, L. M

39
B

ORG: none

TITLE: Angular distribution of the energy and of the dose of scattered neutrons in water

19

SOURCE: Atomnaya energiya, v. 20, no. 2, 1966, 162-164

TOPIC TAGS: neutron scattering, radiation dosimetry, nuclear reactor shield, fast neutron, angular distribution, neutron shielding

ABSTRACT: In view of the limited amount of data pertaining to the angular distribution of fast neutrons, and in view of the importance of these data for reactor shielding design, the authors present an approximate solution procedure, based on the Monte Carlo method, which leads to final results in a form suitable for practical applications. In this solution they calculate the angular distribution of the energy and of the dose of 3.3 and 8.0 Mev neutrons scattered in water and coming from a flat unidirectional source with barrier

Card 1/2 UDC: 539.125.52

2

L 22380-66

ACC NR: AP6007958

geometry. The calculations were described by the author earlier (Atomnaya energiya v. 17, 509, 1964). To increase the accuracy, the Monte Carlo method was combined with analytic methods, as outlined by the author in another paper (Atomnaya energiya v. 19, 288, 1965). The neutron slowing down was traced down to an energy 0.1 Mev. Other procedures for improving the accuracy are described. Plots are presented of the angular distribution for different energies and for the dependence of the angular-distribution constants on the barrier thickness. The results are not always in good agreement with the theory, and it is concluded that calculation of the neutron angular distribution in the single-scattering approximation leads to considerable errors already at thicknesses of the order of several mean free paths. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/18/ SUBM DATE: 29Jul65/ ORIG REF: 008/

Card 2/2dda

PHASE I BOOK EXPLOITATION SOV/3952

Moscow. Fiziko-tekhnicheskiy institut

Issledovaniya po mekhanike i prikladnoy matematike (Studies in Mechanics and Applied Mathematics) Moscow, Oborongiz, 1959. 282 p. (Series: Its Trudy, vyp. 3) 2,150 copies printed.

Sponsoring Agency: USSR. Ministerstvo vysshego obrazovaniya.

Ed.: K. Ya. Zaytseva, Engineer; Ed. of Publishing House: S. D. Antonova; Tech. Ed.: N. A. Pukhlikova; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for scientific workers, engineers, and senior students working in the appropriate fields of science and technology.

COVERAGE: The book, the third issue of the Proceedings of the Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physical and Technical Institute), contains a number of articles. The first half of the book concerns hydroaerodynamical problems (motion of a heavy liquid, calculation of pressure distribution along a solid of revolution, surface waves, etc.). The second half of the book is devoted to the theoretical and experimental study of the deformation of media (design of a thin-walled spherical shell, plastic torsion, etc.) and to certain problems of applied mathematics. No personalities are mentioned. References are given after most of the articles.

Tirskiy, G. A. The Exact Solution for Heat Transfer Through a Disk Rotating in a Viscous Incompressible Liquid 85

Shcherbina, Yu.A. Designing a Temperature Profile for the Wake of a Badly Streamlined Burning Body 95

Rakhmatulin(?), Kh. N. Propagation of Cylindrical Impact Stress Waves in a Thin Plate Beyond the Yield Point 108

Kuznetsov, V. M. On the Effect of Gravity on Ejection During an Underground Explosion 121

Rabinovich, A. L. Approximate Method of Designing a Thin-Walled Spherical Shell 132

Omogidbayev, V. O. Plastic Torsion of Anisotropic Rods 171

Shirko, I. V. Plastic-Elastic Bending of a Thin Plate Fastened Along Its Edge 180

Rabinovich, A. L., M. G. Shtarkov, Ye. I. Dmitriyeva. Certain Regularities in the Homogeneous Deformation of Strengthened Metals in the Case of Uniaxial Tension 194

Livartovskiy, I. V. Some Problems of Stability by Linear Approximation for Systems of Differential Equations With Discontinuous Nonperiodic Right Sides 247

Bechepurenko, M. I. Matrix Method in Structures and Some of Its Applications 264

Trenogin, V. A. Branching of the Solutions of Nonlinear Equations in the Analytic Case 276

AVAILABLE: Library of Congress

Card 4/4

AC/vbe/fal
8-16-60

(13)

SHIRKO, I.V. (Moskva)

Stress discontinuities under general plastic conditions. Inzh.zhur. 1 no.3:188-192 '61. (MIRA 15:2)

(Plasticity)

32765
S/658/61/000/007/004/010
D251/D302

10 7200 1327

AUTHOR: Shirko, I.V.

TITLE: A velocity field under conditions of plasticity of general form

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy, no. 7, 1961. Issledovaniya po mekhanike i prikladnoy matematike, 71 - 84

TEXT: The author considers the equations of plastic equilibrium and flow under the general condition of plasticity

$$\Phi(\sigma, \tau) = 0. \qquad (1)$$

The case of plane deformation is considered, the components of stress being σ_x, σ_y, τ_{xy}, and the components of the velocity of deformation = ε_x, ε_y, γ_{xy}. The principal axes 1 and 2 lie in the xy plane and the principal axis 3 is parallel to the z axis. By defining

Card 1/4

A velocity field under conditions ...

$$s=\frac{1}{2}(\sigma_1+\sigma_2)=\frac{1}{2}(\sigma_x+\sigma_y);$$

$$t=\frac{1}{2}(\sigma_1-\sigma_2)=\sqrt{\frac{1}{4}(\sigma_x-\sigma_y)^2+\tau_{xy}^2},\ \sigma_1>\sigma_2$$

$$e=\frac{1}{2}(\varepsilon_1+\varepsilon_2)=\frac{1}{2}(\varepsilon_x+\varepsilon_y);$$

$$g=\frac{1}{2}(\varepsilon_1-\varepsilon_2)=\sqrt{\frac{1}{4}(\varepsilon_x-\varepsilon_y)^2+\gamma_{xy}^2},\ \varepsilon_1>\varepsilon_2.$$

Eq. (1) may be written, in the case of plane deformation F(s, t) = = 0 (2). By means of the fluidity potential, and the transformation

$$\left.\begin{matrix}\sigma_x\\ \sigma_y\end{matrix}\right\} = \frac{1}{2}(\sigma_1+\sigma_2) \pm \frac{1}{2}(\sigma_1-\sigma_2)\cos\varphi;\ \tau_{xy}=\frac{1}{2}(\sigma_1-\sigma_2)\sin 2\varphi,$$

where φ is the angle between the x-axis and the direction of the principal normal stress σ_1, the system of equations

Card 2/7

A velocity field under conditions ...

$$\left.\begin{aligned}\frac{\partial s}{\partial x}+\cos 2\varphi\frac{\partial t}{\partial x}+\sin 2\varphi\frac{\partial t}{\partial y}-2t\left(\sin 2\varphi\frac{\partial\varphi}{\partial x}-\cos 2\varphi\frac{\partial\varphi}{\partial y}\right)=0;\\ \frac{\partial s}{\partial y}+\sin 2\varphi\frac{\partial t}{\partial x}-\cos 2\varphi\frac{\partial t}{\partial y}-2t\left(\cos 2\varphi\frac{\partial\varphi}{\partial x}+\sin 2\varphi\frac{\partial\varphi}{\partial y}\right)=0,\end{aligned}\right\} \quad (8)$$

and

$$\left.\begin{aligned}2\sin 2\varphi\frac{\partial u}{\partial x}-(h-\cos 2\varphi)\left(\frac{\partial v}{\partial x}+\frac{\partial u}{\partial y}\right)=0;\\ 2\sin 2\varphi\frac{\partial v}{\partial y}-(h-\cos 2\varphi)\left(\frac{\partial v}{\partial x}+\frac{\partial u}{\partial y}\right)=0.\end{aligned}\right\} \quad (9)$$

is obtained where h is a known function of s and t. If $|h|<1$, the system is of the hyperbolic type. By introducing a new variable ψ, and a new function λ by means of

$$\frac{dt}{ds} = -h = \cos 2\psi$$

and $$2d\lambda = \sqrt{1-h^2}\,\frac{ds}{t} = \sin 2\psi\,\frac{ds}{t} = \operatorname{tg} 2\psi\, d \ln t$$

and applying the transformation

Card 3/7

A velocity field under conditions ...

$$P(\lambda) = \frac{1 - \frac{d\psi}{d\lambda}}{\sin 2\psi}$$

the equations of the characteristics of (8) and (9) become

$$\eta = \lambda(\psi) - \varphi = \text{const}; \quad dY + XPd\lambda = 0; \quad dU = VPd\lambda; \tag{12}$$

$$\xi = \lambda(\psi) + \varphi = \text{const}; \quad dX + YPd\lambda = 0; \quad dV = UPd\lambda. \tag{13}$$

The canonical equation for the coordinates is then

$$\frac{\partial Y}{d\xi} + \frac{P}{2} X = 0; \quad \frac{\partial X}{\partial \eta} + \frac{P}{2} V = 0 \tag{14}$$

and for the velocities

$$\frac{\partial U}{\partial \xi} = \frac{P}{2} U; \quad \frac{\partial V}{\partial \eta} = \frac{P}{2} U. \tag{15}$$

The conditions are sought on the discontinuity lines of the field, along which the stress is continuous, but the velocity vector discontinuous. Taking the components of velocity as ε_t, ε_n (resolved

Card 4/7

A velocity field under conditions ...

tangentially and normally to a discontinuity line) and assuming ε_t = 0, then it is shown that the discontinuity line always coincides with a line of slip. From the terminal velocity it follows that

$$\frac{\partial v_n}{\partial n} = -2g\cos 2\psi; \quad \frac{\partial v_t}{\partial n} = \pm 2g \sin 2\psi, \qquad (18)$$

The diagram (Fig. 2) is considered, where $\bar{V}$ is the velocity vector, and $2\psi = \pi/2 + \alpha$. It is shown that in this case, the vector of velocity does not have a normal component in the direction of a line of slip of the family ξ = const and the projection of the velocity vector on a line of slip ξ = const remains continuous on crossing a discontinuity line. Analogous results are obtained for η = const. Coulomb's plasticity conditions are considered and the result obtained in this case by R.T. Shield is quoted. This discontinuity vector along the line of discontinuity is considered. If the projections of the velocity are U and V, then U is discontinuous on η = const and V discontinuous on ξ = const. Also $U = \int VPd\lambda$ + const when η = const. and $V = \int UPd\lambda$ + const, when ξ = const. V is con-

Card 5/7

A velocity field under conditions ...

tinuous along η = const, and U along ξ = const. Hence the leap in the tangential component of the vector of velocity discontinuity is constant along the line of discontinuity. The normal component and the complete vector of velocity discontinuity vary along the line of discontinuity if $\Psi \neq 0$. The method is applied to the special case of Sokolovskiy's form of plasticity conditions. In conclusion, the special case of plastic flow of a rectangular body compressed between plates, a clamped strip, and a strip between smooth material plates rotated through an angle are considered. There are 8 figures and 4 references: 3 Soviet bloc and 1 non-Soviet bloc. The reference to the English-language publication reads as follows: R.T. Shield, Mixed boundary value problems in soil mechanics, Q. Appl. Math. II, 1953, no. 1.

Card 6/7

S/658/62/000/009/006/013
A059/A126

AUTHOR: Shirko,' I.V.

TITLE: Penetration of a punch having an apex through a ribbon

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy. no. 9, 1962. Issledovaniya po mekhanike i prikladnoy matematike. 69 - 79

TEXT: Two problems of punching a ribbon with a rigid, symmetrical stamp are considered under the conditions of plane deformation. The generatrixes of the stamp are two straight lines at an angle of intersection equal to 2γ in the former case, and two non-concentric circles in the latter case. Moreover, it has been mathematically shown that the assumption of constant pressure along the circumference of the stamp is correct. Definite results are given in compact form. V.V. Sokolovskiy [Teoriya plastichnosti (Theory of plasticity), Gostekhizdat, 1950] is mentioned. There are 7 figures.

Card 1/1

SHIRKO, I.V. (Moskva)

Some problems in the theory of plasticity with mixed boundary conditions. Inzh.zhur. 2 no.2:305-310 '62. (MIRA 15:6)
(Plasticity)

SHIRKO, I.V.

Velocity fields under conditions of plasticity of general type. (MIRA 15:4)
Trudy MFTI no.7:71-84 '61.
(Plasticity) (Deformations (Mechanics))

SHIRKO, I.V.

Cutting of a strip with dies having an angle point. Trudy MFTI no.9:69-79 '62. (MIRA 16:5)

(Dies (Metalworking))

Shikhov, I.V. (Moskva)

Shape of an evenly stable plate. Inzh.zhur. 5 no.2:293-298 '65. (MIRA 18:4)

ACC NR: AP7012439 SOURCE CODE: UR/0079/66/036/012/2048/2052

AUTHOR: L'vova, T. I.; Pendin, A. A.; Shirko, K. D.; Nikol'skiy, B. P.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: Standard thermodynamic constants of the reduction of the (ferricenylmethyl) trimethylammonium cation to the (ferrocenylmethyl)trimethylammonium cation with hydrogen in an aqueous solution

SOURCE: Zhurnal obshchey khimii, v. 36, no. 12, 1966, 2048-2052

TOPIC TAGS: ferrocene, aqueous solution, hydrogen, electrochemical analysis, cation

SUB CODE: 07

ABSTRACT: (Ferrocenylmethyl)trimethylammonium perchlorate (F^+ClO_4) was prepared by precipitation of an F^+I solution with $KClO_4$. On the basis of the curves of potentiometric titration of F^+ClO_4 with $K_2Cr_2O_7$ or H_2O_2, the normal potential of the system F^+ cation - (ferricenylmethyl)trimethylammonium cation F^{++} in an 1 N KCl solution was 0.604 ± 0.001 v. The standard redox potentials of $F^{++} - F^+$ at 15, 25, and 35° were determined from the relations between the e.m.f. of the cell $Pt/F^{++}, F^+$; HCl/glass electrode and the ionic strength of the solution at these temperatures. On the basis of the data obtained, the

 UDC: 546.171.1:541.138.2

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ACC NR: AP7012439

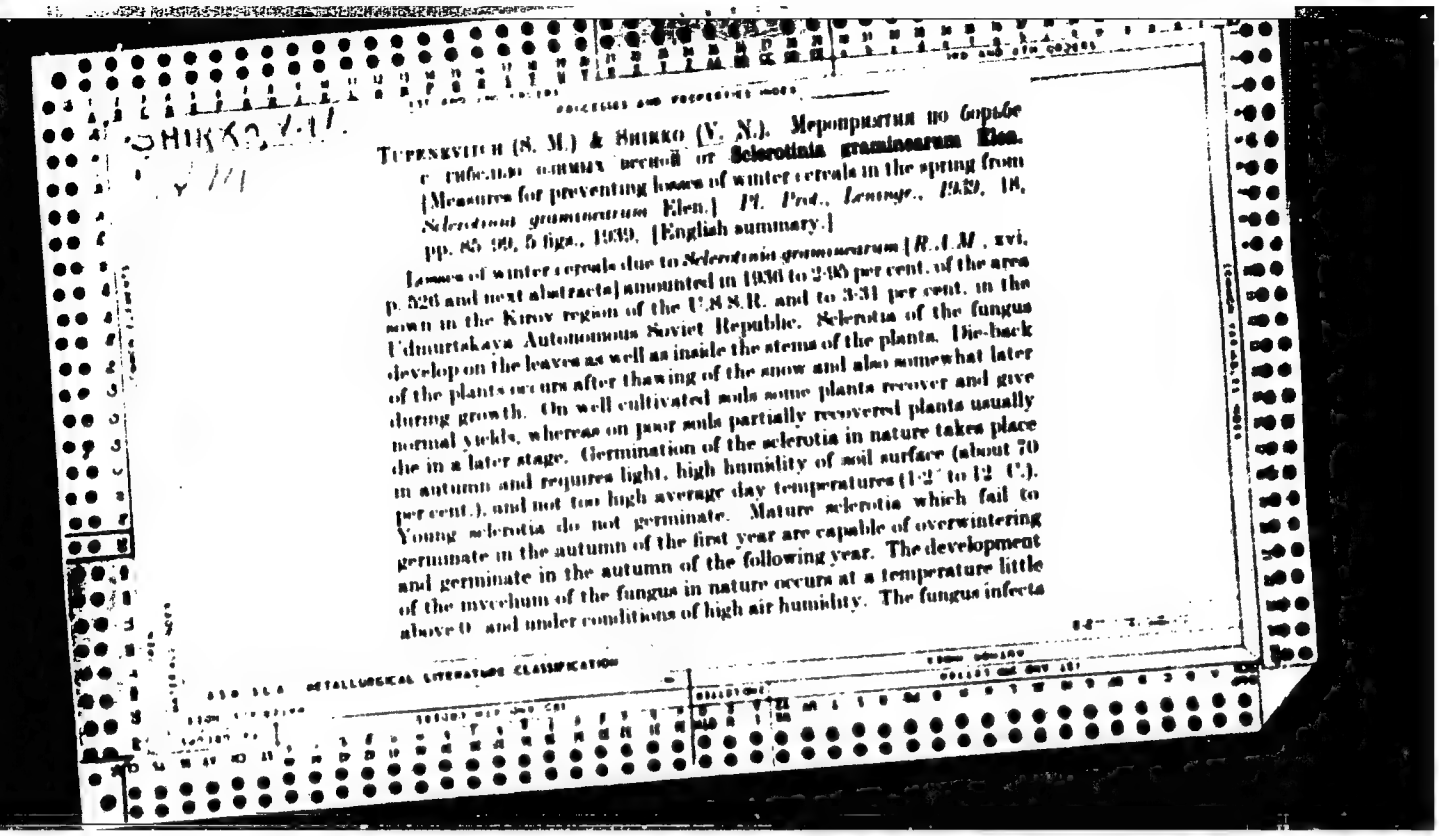
standard thermodynamic constants of the reduction of F^{++} to F^{+} with hydrogen at 25°C were determined at $\Delta G^{\circ} = -15.17 \pm 0.3$ kcal., $\Delta H^{\circ} = -21.1 \pm 0.3$ kcal., and $\Delta S^{\circ} = -23 \pm 1$ entropy units. The titration data indicated that the $F^{+} \rightarrow F^{++}$ reaction was electrochemically reversible. Orig. art. has: 2 figures and 4 formulas. [JPRS: 40,422]

2/2

SHIRKO, V. N.

SHIRKO, V. M. and TUPENIVICH, S. M. "Investigation of the Conditions Conducive to Winter Killing of Winter Sown Cereals," Itogi Nauchno-Issledovatel'skikh Rabot Vsesoiuznogo Instituata Zashchity Rastenii za 1935 Goda, 1936 pp. 143-144. 423.92 L541

SO: SIPA SI - 90-53, 15 December 1953



TUPENEVICH (S. M.) & SHIRKO (V. N.). Мероприятия по борьбе с гибелью озимых всходов от **Sclerotinia graminearum** Elen. [Measures for preventing losses of winter cereals in the spring from *Sclerotinia graminearum* Elen.] *Pl. Prot., Leningr.*, 1939, 18, pp. 85-99, 5 figs., 1939. [English summary.]

Losses of winter cereals due to *Sclerotinia graminearum* [*R.A.M.*, xvi, p. 526 and next abstracts] amounted in 1936 to 2·95 per cent. of the area sown in the Kirov region of the U.S.S.R. and to 3·31 per cent. in the Udmurtskaya Autonomous Soviet Republic. Sclerotia of the fungus develop on the leaves as well as inside the stems of the plants. Die-back of the plants occurs after thawing of the snow and also somewhat later during growth. On well cultivated soils some plants recover and give normal yields, whereas on poor soils partially recovered plants usually die in a later stage. Germination of the sclerotia in nature takes place in autumn and requires light, high humidity of soil surface (about 70 per cent.), and not too high average day temperatures (1·2° to 12° C.). Young sclerotia do not germinate. Mature sclerotia which fail to germinate in the autumn of the first year are capable of overwintering and germinate in the autumn of the following year. The development of the mycelium of the fungus in nature occurs at a temperature little above 0° and under conditions of high air humidity. The fungus infects

winter wheat and rye timothy [*Phleum pratense*], French rye grass [*Arr-* [illegible] has not been observed to [illegible] The recommendations for the control of the disease attack summer crops [illegible] rotation; application of manure and other organic fertilizers (composted turf, green lucerne); liming of acid soils; draining of excessively moist fields and accelerating the melting of snow by scattering fine peat over [illegible] deep and early ploughing of fields where winter crops were badly affected by the disease in order to prevent germination of sclerotia in the autumn; eradication of susceptible cereal weeds, harrowing of winter sowings in the spring; burning of dry leaves with sclerotia collected during harrowing; and growing of resistant varieties. In 1931, during a serious outbreak of the disease, the varieties Erythrospermum 0529 and [illegible] appeared to be very resistant.

SHIRKO, V.N.

Cereal root rot in wet areas of the U.S.S.R. Trudy VIZR no.1:47-50 '48. (MIRA 11:7)

(Grain--Diseases and pests) (Root rot)

USSR / Plant Diseases. Diseases of Cultivated Plants N-3

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22972

Author : Tupenevich, S.M., Shirko, V.N.
Title : The Study of Cabbage Seedling Diseases.

Orig Pub : Sb. rabot In-ta prikl. zool. i fitolatol., 1956, No 4, 147-154

Abstract : The causes of cabbage seedling disease are clarified. The chief source of cabbage style disease during storage is grey putrescence caused by Botrytis cinerea Pers. When affected by B. cinerea the uppermost stem bud in cabbage is destroyed and the main flower-bearing bud does not develop. The fruit and seeds developed from side flower-bearing buds are easily affected by Alternaria brassiceae, which causes seed quality deterioration. To improve the quality of cabbage seeds and to protect them from A. Brassiceae, measures should be taken to prevent development of grey mold on cabbage heads and the uppermost stem bud. Recommendations for preventive measures are stated.

Card : 1/1

SHIMKOV, A. S., Cand. Tech. Sci. (diss) "Investigation of Use Mobility of DT-54 Tractor on Snowcovered Virgin Land," Alma-Ata, 1961, 19 pp. (Combined Council for Kazakh State Agri. Inst.) 200 copies (KL Supp 12-61, 277).

DANILYCHEV, V.A.; KARLOV, N.V.; OSIPOV, B.D.; SHIRKOV, A.V.; SHLIPPE, G.I.

Magnetic resistance used in field measurements at helium temperatures. Prib. i tekh. eksp. 8 no.5:221 S-O '63. (MIRA 16:12)

1. Fizivheskiy institut AN SSSR.

YEMEL'YANOVA, Ye.N.; KARLOV, N.V.; MANENKOV, A.A.; MILYAYEV, V.A.; PROKHOROV, A.M.; SMIRNOV, S.P.; SHIRKOV, A.V.

Electron paramagnetic resonance spectrum and spin-lattice relaxation of chromium and iron ions in zinc tungstate single crystals. Zhur. eksp. i teor. fiz. 44 no.3:868-869 Mr '63. (MIRA 16:3)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.
(Paramagnetic resonance and relaxation) (Zinc tungstate crystals)
(Ions)

EWT(l)/EWT(m)/EEC(t)/EWP(t)/EWP(b) Peb IJP(c)/AFWL/
JD/JG/JG
ACCESSION NR: AP4039648 S/0181/64/006/006/1649/1653

AUTHOR: Andreyeva, Ya. V.; Karlov, N. V.; Manenkov, A. A.; Milyayev, V. A.; Shirkov, A. V.

TITLE: Electron paramagnetic resonance of chromium ions in cadmium tungstate

SOURCE: Fizika tverdogo tela, v. 6, no. 6, 1964, 1649-1653

TOPIC TAGS: electron paramagnetic resonance, Czochralski method, spin lattice relaxation, spin Hamiltonian, chromium ion, cadmium tungstate

ABSTRACT: Samples were grown by the Czochralski method from pure fused $CdWO_4$ to which $(NH_4)Cr_2O_7$ had been added. The crystal thus obtained contained no Cr^{3+} ions, but after annealing in air for several hours at 700C, a transition to the trivalent state occurred. Electron paramagnetic resonance was observed in the temperature interval from 300 to 1.6K at frequencies from 9.4 to 98 gigacycles in magnetic fields ranging up to 10 kilogauss. The constants of the spin Hamiltonian for Cr^{3+}

Card 1/3

were found to be D = 42.9 ± 0.05 gigacycles, E = 2.35 ± 0.02 gigacycles, g_x = 1.97 ± 0.01, g_y = 1.97 ± 0.01, and g_z = 1.98 ± 0.01. The spin-lattice relaxation time, measured when the magnetic field was parallel to z, was found to be 0.36 microseconds at 4.2 and 3.0 microseconds at 1.6K. This time dependence may be explained by direct resonance processes of relaxation if it is assumed that direct relaxation is forbidden between the lower investigated levels M = ± 1/2 and is allowed through the upper level M = 3/2 at some distance d from the level M = 1/2. The value of d obtained from the equation for temperature dependence is 100 gigacycles; from spectroscopic data the splitting between the two levels (1/2 and 3/2) proved to be 96 gigacycles, very near 100. This supports the view of a relaxation mechanism. "The authors thank V. V. Osiko, who prepared the single crystals of CdWO4, and L. N. Dem'yanets, who made the x-ray studies of the crystals." Orig. art. has: 2 figures, 3 tables, and 2 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Physics Institute, AN SSSR)

L 00175-65

ACCESSION NR: AP4039648

SUBMITTED: 13Dec63 ENCL: 00

SUB CODE: SS, NP NO REF SOV: 003 OTHER: 008

Card 3/3

TYRYSHKIN, V.G., kandidat tekhnicheskikh nauk; SHIREOV, B.A., inzhener.

Effect of bandage and holding wire on the efficiency of a turbine stage with long blades. Teploenergetika 4 no.9:16-19 S '57. (MIRA 10:8)

1. TSentral'nyy kotloturbinnyy institut.
(Turbines)

TYRYSHKIN, V. G., kand. tekhn. nauk; SHIRKOV, B. A., inzh.

Effect of leakage through the radial gaps between the rotor and the gate mechanism on the efficiency of a turbine stage. Energomashinostroenie 8 no.12:26-29 D '62. (MIRA 16:1)

(Gas turbines)

Shirkov, D.V.

USSR/Physics - Field theory

Card 1/2 Pub. 118 - 1/3

Authors : Bogolyubov, N. N. and Shirokov, D. V.

Title : Problems of the quantum theory of a field

Periodical : Usp. Fiz. nauk 55/2, 149-214, Feb 1955

Abstract : The quantum theory of a field is considered. Due to a localizing character of the present day quantum theory, the complete description of a field by this theory meets with considerable difficulties. In order to overcome these difficulties, a study of their nature is suggested. For this purpose, a method of transformation of the so-called "field function" (used in the ordinary quantum theory) into the so-called "operators" (used in an advance quantum theory) is presented. Then, problems are considered which involve the determination of singular integrable operators playing a very important role in the analysis of the

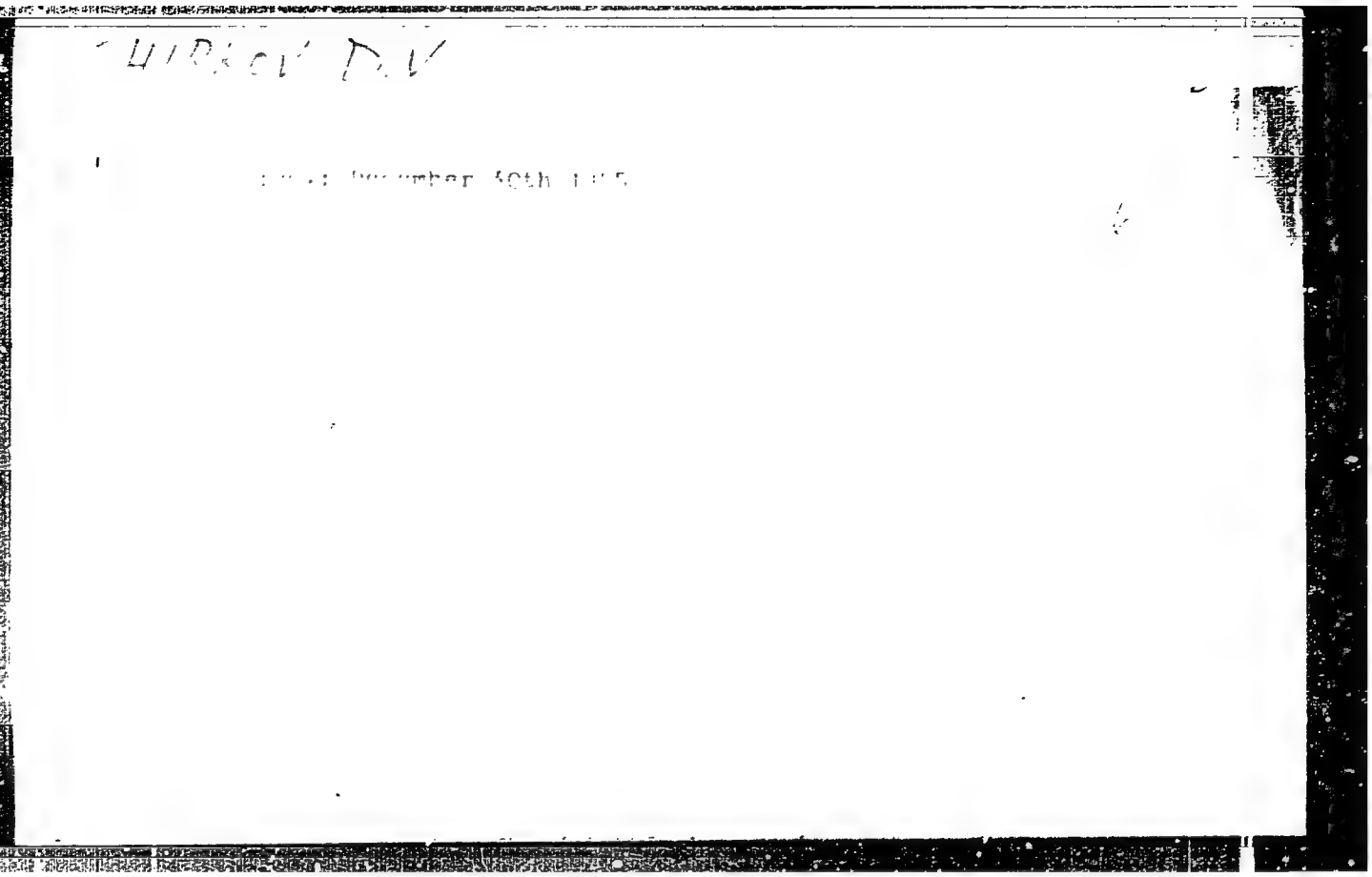
Institution : .....

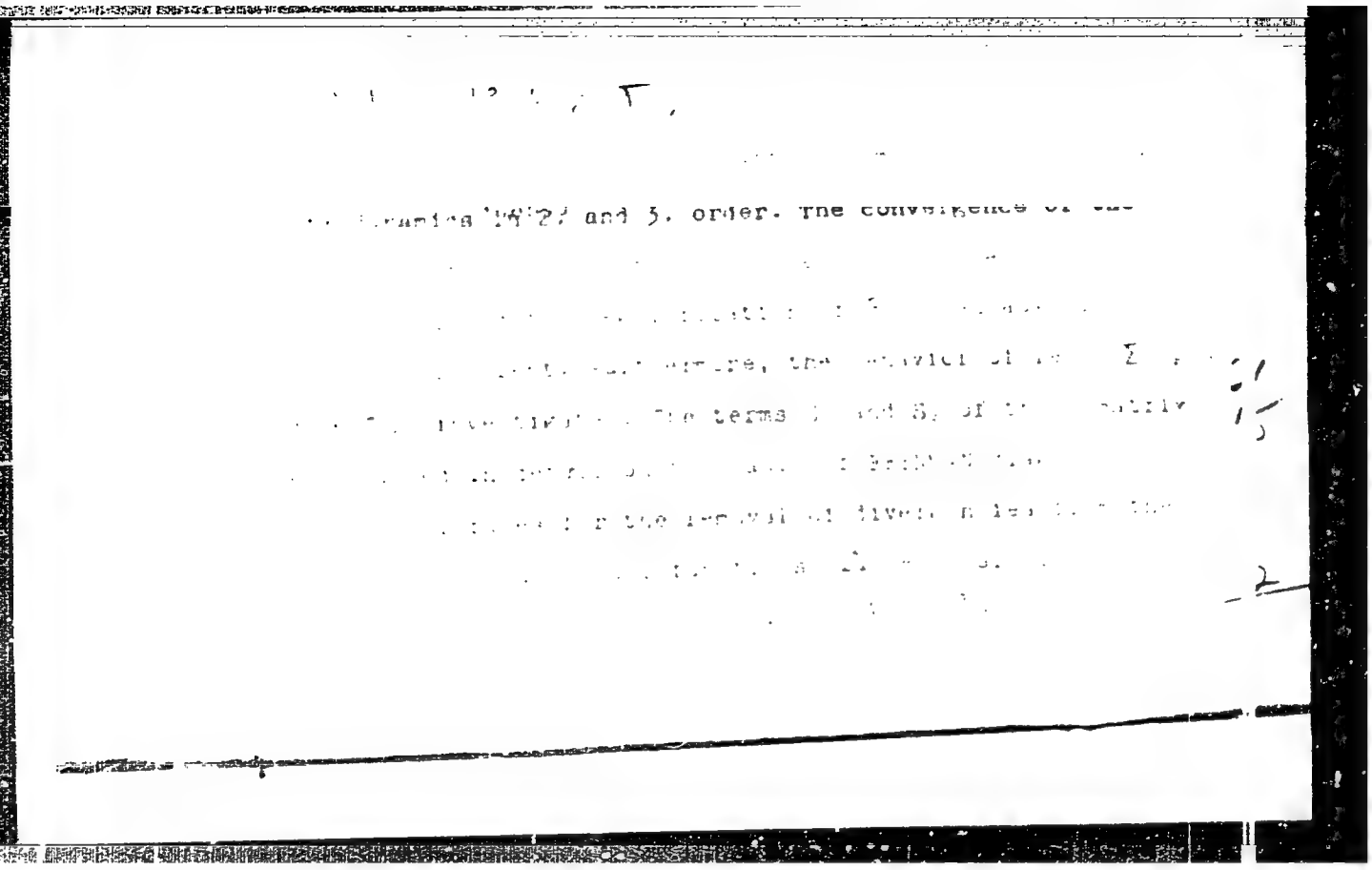
Submitted : .....

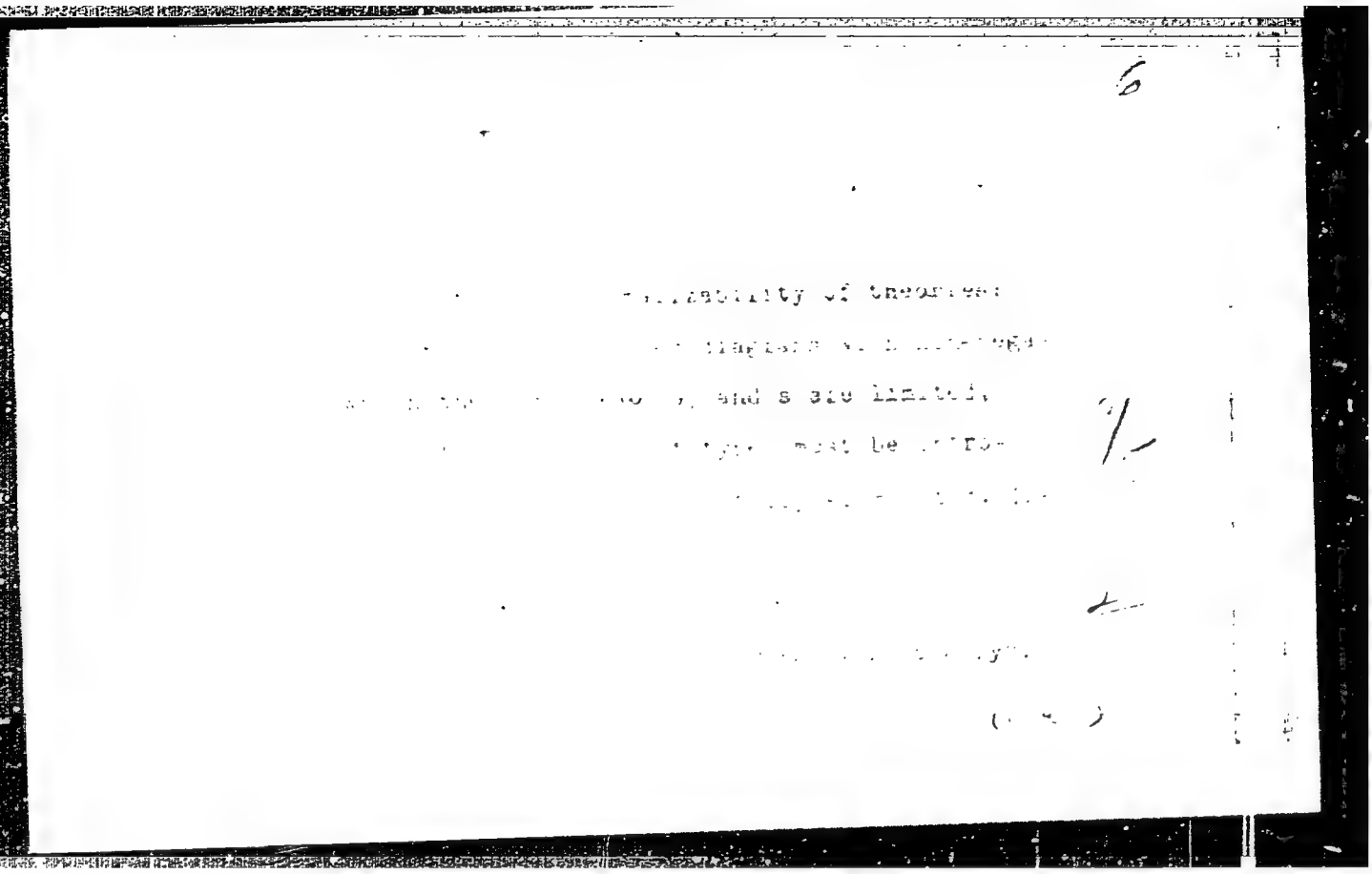
Card 2/2 Pub. 118 - 1/3

Periodical : Usp. Fiz. nauk 55/2, 149-214, Feb 1955

Abstract : matrixes of dispersion of the theory of interacting fields. Then a method is introduced for the construction of a matrix of dispersion that would be based, not on the Hamiltonian formation, as was done in the ordinary quantum theory, but on the Lagrangenian of an interaction ($\mathcal{L}(x)$) in which physical conditions, relativistic covariation, unitorsion and causality of the matrix elements play the role of a Hamiltonian. Then, a method is presented for determining the so-called "chronological products", i.e., T-products of ordered elements of the matrix of dispersion. This is done with the help of Wick's theorem on the evaluation of the chronological products. In conclusion an application of the Wick theorem to the Feynman rules of evaluation of matrix elements is presented. Twenty-one references: 4 USSR, 10 USA, 3 Brit. and 4 Swiss (1939-1953). Table.







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... wave [illegible]

In interaction the case of [illegible] electrodynamics, which

[illegible] importance, is investigated, viz. a system

[illegible] 4/15

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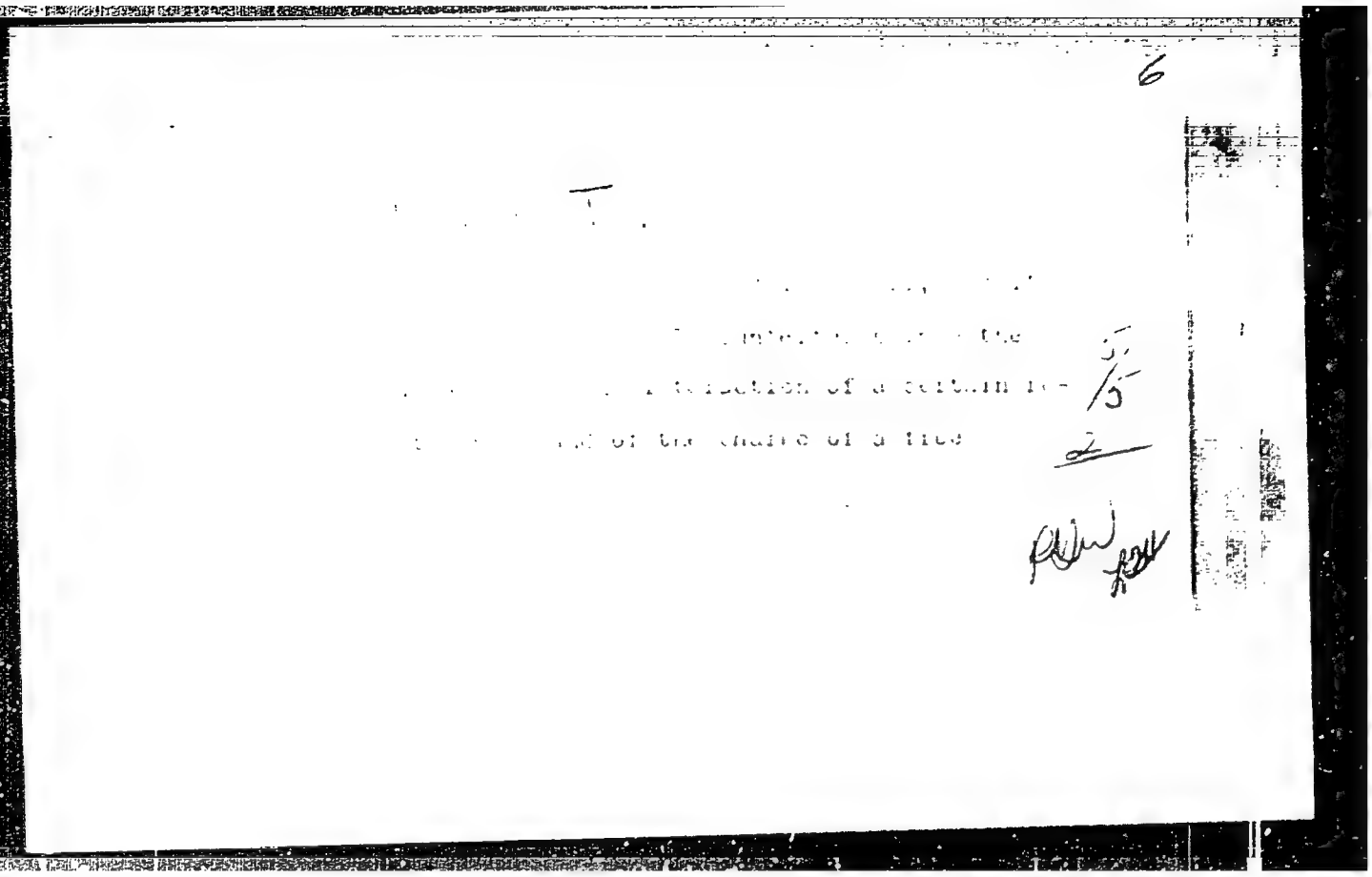
[illegible] region.



SHIRKOV, D.V.

USSR/ Physics - Theory of disturbances

Card 1/1 Pub. 22 - 7/45

Authors : Bogolyubov, N. N., Academician, and Shirkov, D. V.

Title : On the renormalizing group in quantum electrodynamics

Periodical : Dok. AN SSSR 103/2, 203-206, Jul 11, 1955

Abstract : A further development of the method of renormalizing groups of quantum electro-dynamics is presented. The method was used by Gell-Mann and Low in their calculations of quantities characterizing the behavior of the Green functions, used in quantum electro-dynamics, in the cases of large pulses. The present article gives general formulas for the transfer from the general theory of disturbances not only to the theory of large pulses, but also to the theory of "infra-red catastrophies". Three references: 1 USSR and 2 USA (1953-1954).

Institution : The Acad. of Sc., USSR, Mathematical Institute imeni V. A. Steklov

Submitted : March 2, 1955

SHIRKOV, D.V.

BOGOLYUBOV, N.N., akademik; SHIRKOV, D.V.

Application of renormalized groups to the improvement of the perturbation theory. Dokl. AN SSSR 103 no.3:391-394 Jl'55.
(MLRA 8:11)

1. Matematicheskiy institut imeni V.A.Steklova Akademii nauk SSSR
(Perturbation) (Quantum theory)

BOGOLYUBOV, N.N., akademik; SHIRKOV, D.V.

A Lee-type model in quantum electrodynamics. Dokl. AN SSSR 105 no.4:685-688 D '55. (MLRA 9:3)

1. Matematicheskiy institut imeni V.A. Steklova Akademii nauk SSSR.

(Quantum theory)

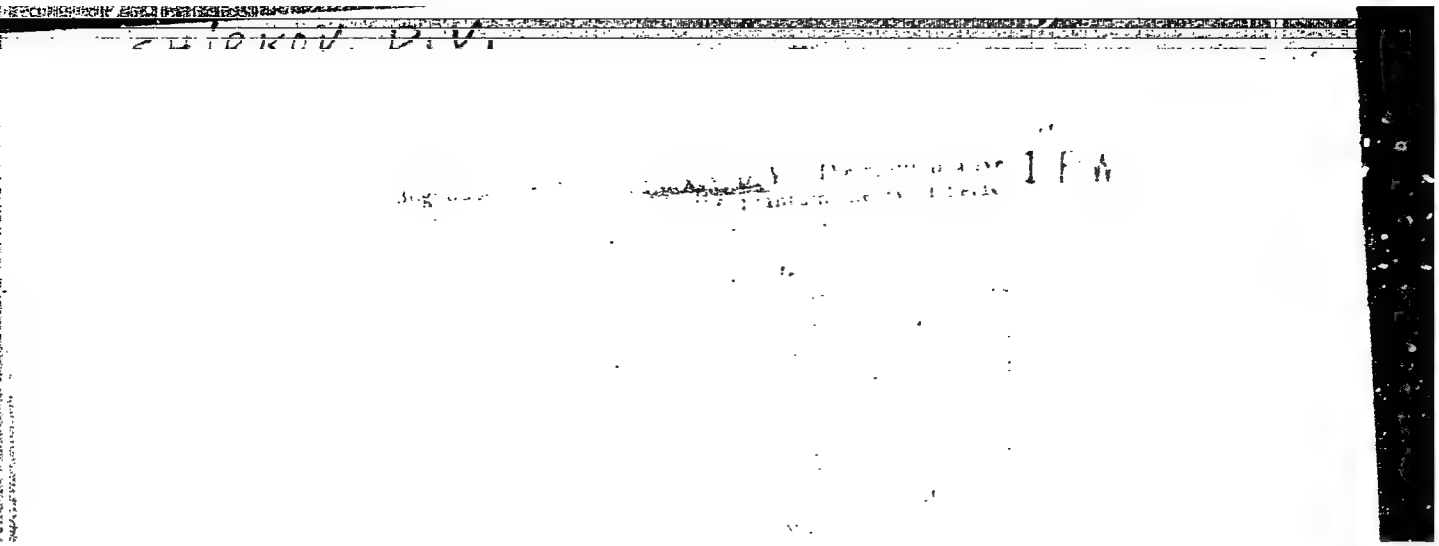
5881
DOUBLY CHARGED RENORMALIZATION GROUP IN PSEUDOSCALAR MESON THEORY. D. V. Shirkov. (Steklov Inst. of Mathematics). Doklady Akad. Nauk S.S.S.R. 102, 972-5(1955) Dec. 11. (In Russian).

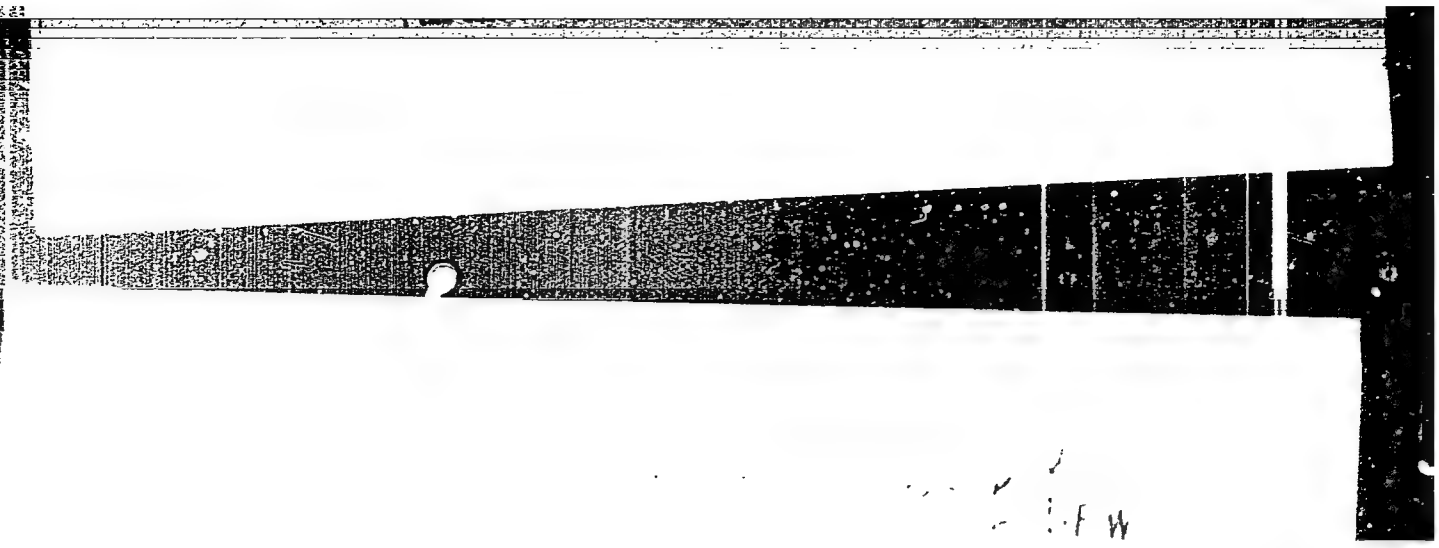
The method of renormalization is adapted to pseudoscalar meson theory, i.e., to the system of nucleon spinor and pseudoscalar meson fields with pseudoscalar interaction. A special case of a doubly charged group is investigated. (R.V.J.)

SHIRKOV, D. V. Moth. Inst. im. Steklov, A. USSR, Moscow. and BLANK, V. E., Physical Faculty, Moscow, State U.

"Improvement of Quantum Electrodynamics Perturbation Theory with Help of the Renormalization Group," Nuclear Physics (publ. in Amsterdam) 2, No. 4, p 356, 1956.

Article written in English





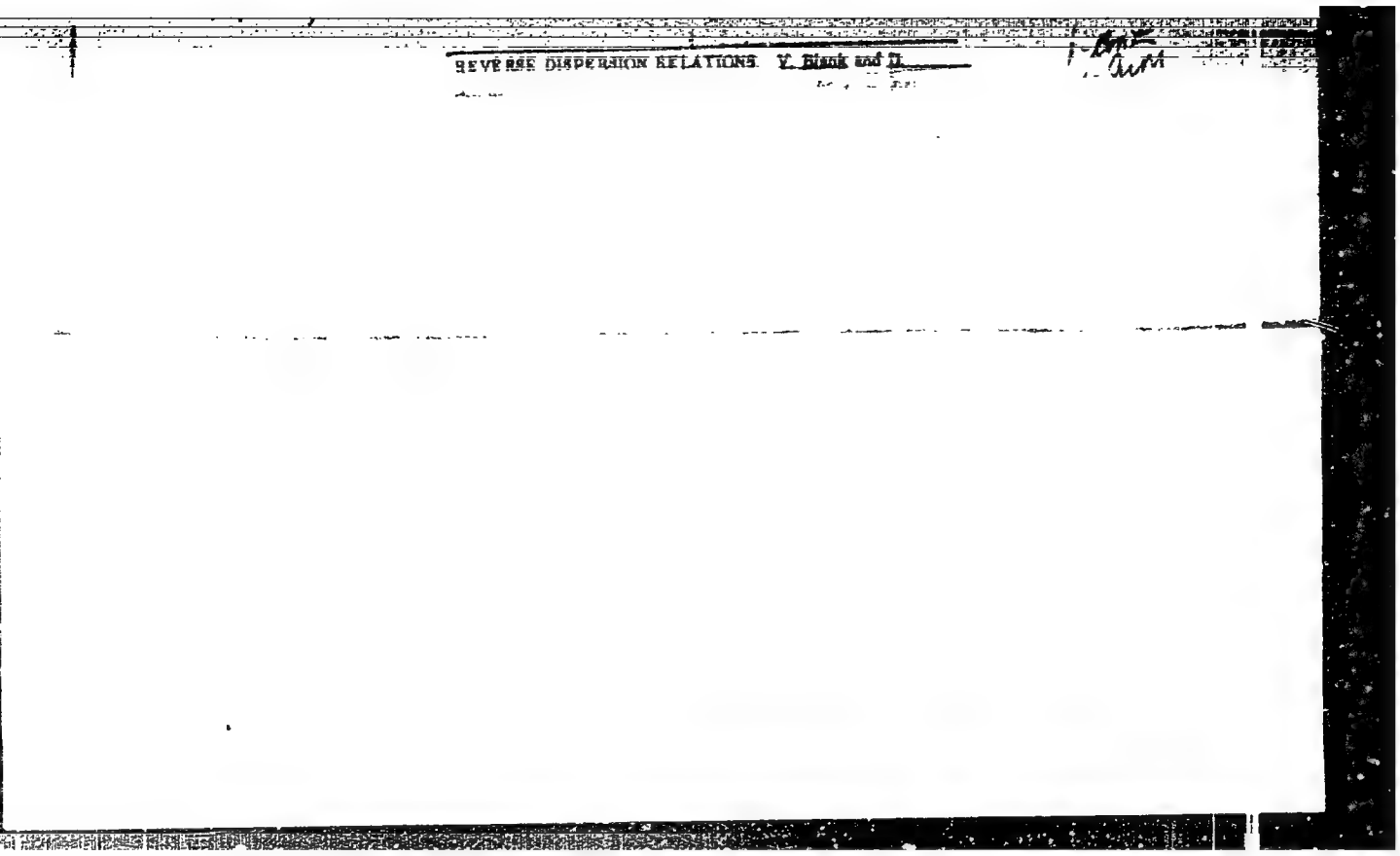
530.145

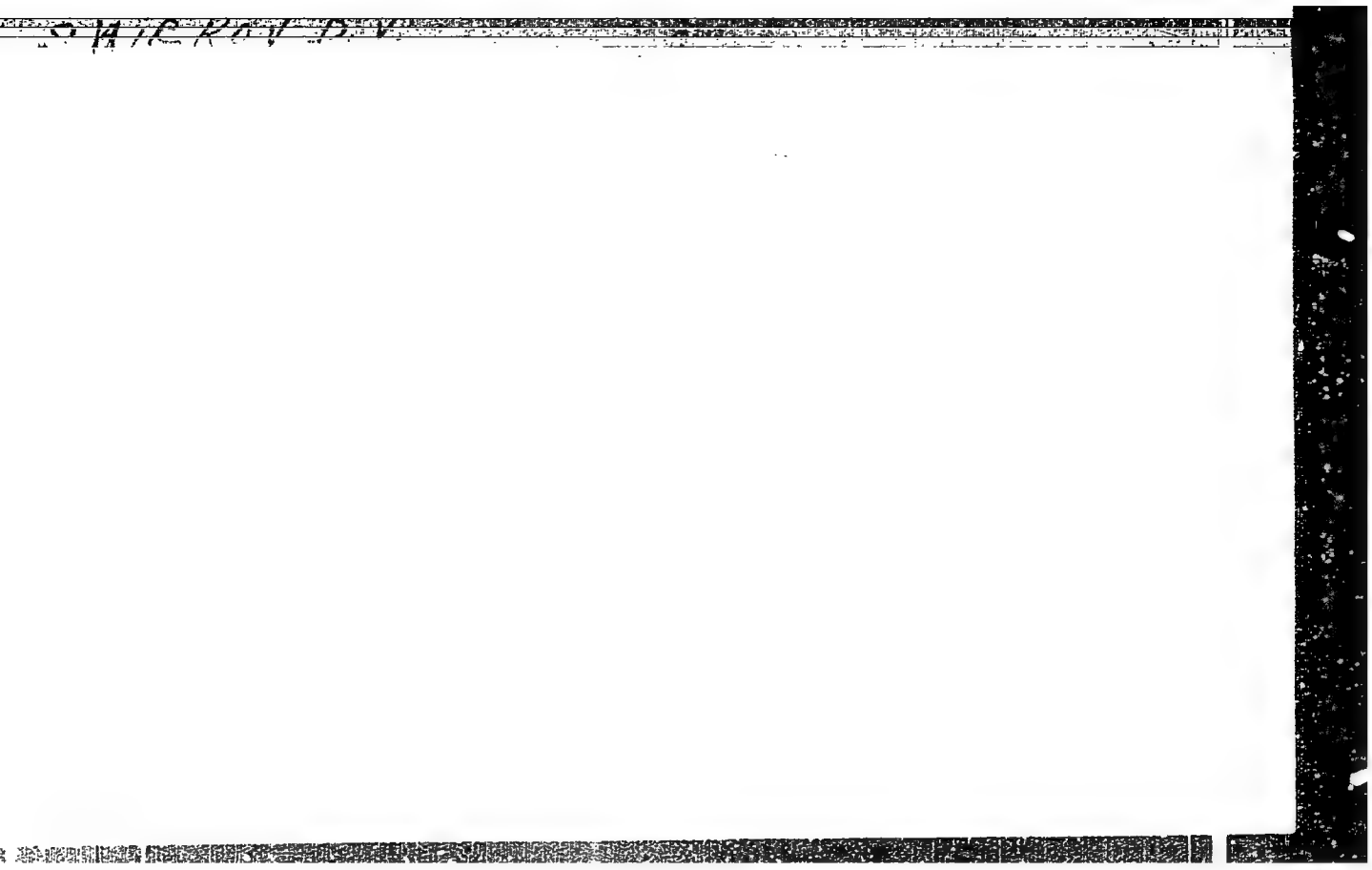
4806. MULTIPLICATIVE RENORMALIZATION GROUP IN QUANTUM FIELD THEORY. N.N.Bogolyubov and D.V.Shirkov. Zh. eksper. teor. Fiz., Vol. 30, No. 1, 77-86 (1956). In Russian.

Lie differential equations for the multiplicative renormalization group of quantum field theory are presented. As an illustration of application of the equations spinor electrodynamics Green's functions have been determined in the ultraviolet and infrared catastrophe regions. A.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1940
AUTHOR BLANK, V.Z., SIRKOV, D.V.
TITLE Asymptotic Investigations of the Summit Part in Quantum Electrodynamics.
PERIODICAL Dokl.Akad.Nauk, 111, fasc.6, 1201-1204 (1956)
Issued: 2 / 1957

The present report uses the method of the renormalization group, which was formerly used for improving the perturbational formulae for GREEN'S functions, for the purpose of improving the formulae for the summit part. As the authors wish to obtain asymptotic expressions for the summit operator in the infrared and ultrared domain, only that term in Γ^n is from the very outset investigated here which is proportional to the matrix γ^n. This term apparently represents a scalar function of the three independent scalar arguments p^2, q^2 and k^2: $\Gamma^n = \gamma^n \Gamma(p^2, q^2, k^2)$. The multiplicative arbitrariness of the summit function is transferred to the arguments of the function Γ by the introduction of the square of an auxiliary momentum, going over to dimensionless arguments on this occasion.
The functional equation for the summit part and the corresponding LEE'S differential equation are written down, the latter is also integrated. These formulae are considerably simplified if, for the definition of Γ, the perturbation theory of second order is used. It is then possible to compute certain formulae in explicit form. Here the concrete case of ultraviolet asymptotic behavior is





SHIRKOV, DMITRIY VASIL'YEVICH

Call Nr: QC 174.5.B6

AUTHORS: Bogolyubov, Nikolay Nikolayevich; and Shirkov, Dmitriy Vasil'yevich

TITLE: Introduction to the Theory of Quantum Fields (Vvedeniye v teoriyu kvantovannykh poley)

PUB. DATA: Gosudarstvennoye izdatel'stvo tekhniko-teoreticheskoy literatury, Moscow, 1957, 442 pp., 8,000 copies

EDITORS: Rydnik, V.I.; Tech. Ed.: Negrimovskaya, R.A.

PURPOSE: This book is intended for the benefit of students beginning the study of the quantum field theory and for theoreticians already working in this branch of physics.

Card 1/~~31~~ 2

Introduction to the Theory of Quantum Fields (Cont.)

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2.2. Hamilton and Lagrange formalisms (15)

2.3. Lagrange function and the principle of stationary action (16)

56-5-27/46

AUTHOR: Blank, V.Z. (Deceased), Shirkov, D.V.

TITLE: Inverse Dispersion Relations (Obratnyye dispersionnyye soot-nosheniya)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol. 33, Nr 5, pp. 1251-1253 (USSR)

ABSTRACT: "Inverse" dispersion relations between the imaginary part of the scattering amplitude, which is connected with Cochy's integral, and the real part of the scattering amplitude are dealt with theoretically. Computation of the integral in the observeable domain is carried out by means of the ordinary (direct) dispersion relations. The scattering amplitudes of charged ions by nucleons are dealt with in a concrete manner. For this case the physical inverse dispersion relation, which contains only observeable quantities, is derived. There are 5 references, 1 of which is Slavic.

ASSOCIATION: United Nuclear Research Institute (Ob"yedinennyy institut yadernykh issledovaniy)

SUBMITTED: May 17, 1957
AVAILABLE: Library of Congress

Card 1/1

SHIRKOV, D.V.

56-7-41/66

AUTHOR BLANK, V.Z. (Deceased)
BONCH-BRUYEVICH, V.L., SHIRKOV, D.V.

TITLE A Note Concerning the Group of the Multiplicative Renormalization in the Quantum Theory of the Field. (Zamechaniye k gruppe mul'tiplikativnoy renormirovki v kvantovoy teorii polya.- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 33, Nr 7, pp 265-266 (USSR)

ABSTRACT The renormalization group is not necessarily connected with the existence of divergences and occurs also in the "finite" theories, e.g. in the theory of the electron-photon-field in a solid body. The authors here investigate such a quantum theory of the field in which the LAGRANGIAN of the interaction (in interaction representation) takes the form

$$L(x) = \{g\bar{\psi}(x)\,\Gamma_0\,\psi(x) + J(x)\}\,A(x)$$

Here g denotes the coupling constant $\bar{\psi},\psi$ and A - FERMI - and BOSE operators, Γ_0 - the elementary vertex part $x = \{\vec{x},x_0\}$, J - the "outer current". Nothing definite is assumed here as to the tensorial character of Γ_0, J, A.

CARD 1/3